

Foundation Roundup

"AIR POWER: MEETING THE
CHALLENGES OF THE 21ST CENTURY"

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AFA National Symposium

AIR POWER - MEETING THE CHALLENGES OF THE 21ST CENTURY

February 23-24, 1995

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The Aerospace Education Foundation, the non-profit affiliate of the Air Force Association, was established in 1956 to formulate and administer the Association's education outreach programs. Supported through tax-deductible contributions (all donations to AEF are used solely for programs and scholarships), the Foundation sponsors scholarship, technical symposia, educator workshops and contests designed to promote aerospace education and help meet the need for scientific and technological expertise. The Aerospace Education Foundation is a tax-exempt 501 (c)(3) corporation. Tax identification #52-6043929.

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AIR FORCE ASSOCIATION

The Air Force Association (AFA) is an independent veterans' organization whose objective is to promote greater understanding of aerospace and national defense issues. Among the ways AFA disseminates information are publication of AIR FORCE Magazine, sponsorship of a series of national symposia, and through educational outreach programs of its affiliate, the Aerospace Education Foundation.

AFA is a grass-roots organization. Total membership is nearly 180,000. There are 350 AFA chapters in the United States and overseas. The Association has 202 Industrial Associates, and its chapters have established ties locally with more than 2,330 businesses in the Community Partner program. The Air Force Association was incorporated in the District of Columbia on February 6, 1946.

AEROSPACE EDUCATION FOUNDATION

Aerospace Education . . . Leading America Into The 21st Century

On May 1, 1956, the Air Force Association established the Aerospace Education Foundation (AEF). The Foundation supports a range of educational and scholarship programs nationwide, which are of special interest to AFA members. As a 501(c)(3) nonprofit organization, all contributions to AEF are tax deductible. AEF educates AFA members and the public about the critical role aerospace development plays in the contemporary world.

In its first year, AEF presented three awards to two civilians and an officer of

the Air Research and Development Command by General Doolittle. In 1957, the first AEF scholarships were established for children of deceased Air Force test pilots. By 1958, AEF sponsored its first national symposium, "The Space Age in Perspective." The history of the Aerospace Education Foundation is a dynamic story of a foundation that identified the needs of the Air Force and the broader needs of the nation's aerospace community, and acted to meet those needs.

- **Scholarship Programs.** AEF annually awards von Karman scholarships to graduating AFROTC students for advanced study in math, science or engineering. Ten annual scholarships are given to outstanding members of the Angel Flight/Silver Wings Society, and for the first time in 1995, ten scholarships will be awarded to Air Force spouses.
- **Eagle Grants.** Approximately 400 grants for undergraduate education are given to outstanding enlisted Air Force graduates of the Community College of the Air Force each year.
- **Visions of Exploration.** Each year more than 50,000 elementary school students participate in this program that encourages interest in math and science.
- **Chapter Aerospace Education Matching Grants.** New for 1995, the Foundation provides matching funds for AFA chapters to initiate new aerospace education programs.
- **Direct Grants to Educators.** Initially available in 1995, AEF provides grants for aerospace education activities by teachers.

R.E. Smith

President, AFA

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GENERAL HATCH: *Good afternoon, ladies and gentlemen. Thanks for being here with us today. I'm Monroe Hatch, the executive director of the Air Force Association and its affiliate, the Aerospace Education Foundation. We are delighted you could be here today. This is our 11th annual symposium here in Orlando. Our theme is "Air Power: Meeting the Challenges of the 21st Century." We are again indebted to General Mike Loh and his staff for their support, and to the Air Combat Command, and the people in the Central Florida Chapter of the Air Force Association who helped make this event a success.*

It is my pleasure to introduce you to AFA's National President from West Point, Mississippi, Gene Smith.

Mr. R. E. SMITH: Thank you very much Monroe. A few months ago, the nation spoke loudly, if not altogether clearly, about the need for a change in national direction. The new leadership on Capitol Hill appears to be of two minds about defense. One side says the drawdown has gone much too far and too fast. There is a strong feeling among the leaders of the congressional defense committees that the current forces cannot meet the demands of the current strategy. The other side says the deficit has climbed too far, too fast, and it requires great fiscal caution and a tremendous amount of effort to control these expenses. How this debate between defense needs and the deficit will resolve itself is still unclear.

The struggles on Capitol Hill parallel the difficulties faced by the Air Force and the industry aerospace leaders. The demands of meeting these requirements and pursuing good ideas will always stretch fiscal resources even if the budgets rise. Prioritizing is difficult, but an absolute must.

There is another, equally troubling, aspect to the public's demand for change this symposium can help to address. Polling data shows national security concerns are low on the list of priorities for the average American. In a way, it is both justified and comforting. Many threats have abated and we have the most capable military forces in the world. But, you can't go through the list of trouble spots — of potential threats — without realizing security concerns must remain a very high priority with all in this country. While there might be no threatening evil empire to unify and motivate the United States and its allies, serious threats exist to the U.S. today. They can take extreme form very quickly, and we need to be ready when they do.

Part of what we hope to accomplish here today is to raise that level of public interest in and awareness of these complex issues. Today and tomorrow we have brought together a group of Air Force leaders who are superbly qualified to talk about the role aerospace forces will play in a future conflict and how the Air Force plans to equip and train our people to do this. Your active participation during the next



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your specific concerns. I encourage you to ask questions during the question and answer periods and I encourage you to talk to these leaders as a way to exchange ideas. If our combined efforts in all these areas shed some light on these tough issues facing us and give you some insight into the needs of the future and how to meet them, then we will count this gathering a success. I will particularly count a success if you take these ideas back with you and share them in your chapters in your states and in your region and more especially with the American people. Again, let me thank you very much for being here today. I look forward to hearing General Loh and the other speakers, and I am sure you will have an absolutely wonderful day. Monroe.

GENERAL HATCH: *Now it is an honor and a pleasure to proceed to our keynote speaker for today. Ladies and Gentlemen, I am pleased to introduce a good friend of the Air Force Association, the co-sponsor of this symposium, and the commander of Air Combat Command, General John M. "Mike" Loh.*

General John M. Loh

Air Combat Command

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KEEPING AMERICA'S AIRPOWER EDGE BALANCING FUTURE NEEDS WITH TODAY'S REALITIES

Thank you, Monroe [Monroe W. Hatch, Jr., AFA Executive Director]. It is good to be here, and I thank the Air Force Association for its continued leadership in putting on this stellar event every year. I have a lot of information to cover so I'm going to dive right in. My talk is longer than I was allotted, but there's a lot to say about what's going on these days, what our priorities are, and what our needs are. It will not be as long as the State of the Union message, but it may be close.

When we gathered here last February, I talked about four themes:

First — the need to reduce the indirect support structure and the portion of our budget devoted to support operations and maintenance in order to free up and provide funding for continued research, development and acquisition — the investment part of our budget — and to sustain the O&M for our fighting forces.

Second — I spoke about our need to determine the proper force size to win two nearly simultaneous major regional conflicts.

Third — our equipment needs — our investment needs to ensure technological leadership and high quality forces for the future.

Fourth — I listed a few of the key technologies to ensure the combat Air Force's leadership remains a big part in the combat power equation.

Since we met last year, we've had a very busy year in Air Combat Command. Several key things have taken place:

First, the many peacetime commitments that have engaged military forces over the past year have played a large part in keeping us busy. At the start of this year, for example, the Air Force had over 15,000 people deployed around the world; 8,000 of those were from Air Combat Command in these operations other than war.

Second, Air Combat Command completed the congressionally-mandated assessment of our B-1 bomber force. This is a good news story, as I anticipated. This test proved that the B-1 fleet can perform exceptionally well, given the proper level of logistics, manning and funding. We are now working the comprehensive review of the bomber force — the entire bomber force — directed in the 1995 Budget Act; a very important piece of work.

Third, we're hearing concerns from Congress about the readiness of American fighting forces — especially in light of the large number and continuing duration of recent contingency operations.

Considering these factors, I've come up again with four themes that I think we must address to ensure our Air Force continues to meet our nation's needs.



"The congressionally-mandated assessment of our B-1 bomber force . . . proved that the B-1 fleet can perform exceptionally well, given the proper level of logistics, manning and funding."

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First, as the major provider of land-based air forces to meet a key element of our national strategy of winning two nearly simultaneous major regional conflicts, I'm concerned we have sufficient forces to prosecute this strategy effectively. Our requirement is clear: to be able to win two back-to-back MRCs. That strategy is a sound one, and it has been reiterated within the past week as the strategy for the nation's defense business.

"I'm concerned we have sufficient forces to prosecute this Two MRC strategy effectively."

Our business, as many people have said, is to fight and win our nation's wars. This requirement is the driving force in dictating the size and quality of our air combat forces. Peacekeeping and relief operations generate requirements that must be accommodated within that force structure. If we ensure we have enough forces to fulfill our first priority — winning two MRCs — then we can do these other things, although they drain the force, and I'll be talking about that more in just a few minutes.

Second, we need to make smart choices in this austere budget environment that will help continue to leverage our technological superiority.

Third, we need to continue to focus on balancing readiness, force structure and modernization, and I'll have a lot to say about that.

Finally, I want to highlight the key technologies and programs we will rely and depend on to take us into the 21st century and ensure our leadership in the combat air power equation.

As a provider of forces, Air Combat Command will furnish the bulk — the vast majority — of the land-based air forces needed to prosecute the two MRC strategy. This strategy is sound. What I see as our biggest challenge, however, is main-

taining sufficient forces to meet the strategy. Our guidance suggests that we be able to win both of them quickly, decisively with overwhelming advantage, and with few casualties. And I believe that's what the American people expect and that's what Congress expects.

Last year, I expressed my concern about our ability to do that. Today, I'm still concerned. I still see several factors that impinge on our ability to fulfill the requirements of the two MRC strategy. Some are capabilities that are critical to our performance. Others are force structure issues. I'll address seven of these factors.

The first is our ability to retain a sufficient air superiority capability for two MRCs or any other contingencies. Air superiority guarantees freedom of movement for all of our forces. Our superiority in the air has not been seriously challenged or threatened since the North African campaigns of World War II. Perhaps for this reason, we take for granted our ability to attain air superiority, and undervalue its importance. Yet, other nations are not complacent when it comes to upgrading their own air defense aircraft and their integrated air defense systems. That's why the F-22 program is so important to us.

"We need to make smart choices in this austere budget environment that will help continue to leverage our technological superiority."

The second pivotal factor we must address when considering our ability to fight and win two back-to-back MRCs is our capability to deliver, from a variety of fighter and bomber aircraft, advanced precision weapons. The Gulf War clearly showed the value of both precision and stand-off weapons to modern warfare. The quality of that fighter and bomber force is

important. And continuing to add such advanced weapons capability to our bombers will greatly increase their value and their leverage.

That leads me to the third factor — the weapons themselves — the precision and the stand-off munitions these aircraft will carry. We must be concerned with the distribution and the quantity of our advanced munitions. The MRC analyses I have done see advanced munitions growing in importance. But, are we moving quickly enough to ensure the development and fielding of such weapons, and are we buying enough of them? My analysis shows we need to get them faster. We need to buy more, and I'm talking about both the direct attack munitions as well as the stand-off weapons.

The fourth factor — will we have enough bombers, properly upgraded, to deploy 100 to a major regional conflict? Our analysis tells us we would need 100 bombers in the initial days of a major conflict to provide an aggressive, immediate response to begin neutralizing an enemy's offensive capabilities. Those bombers, armed with a variety of weapons, such as the sensor fused weapon, and eventually JDAM [Joint Direct Attack Munition] and JSOW [Joint Stand-off Weapon], for instance, will make an important difference in the initial pace of any war.

Last September, the nuclear posture review defined our requirement to maintain a nuclear force, a dedicated nuclear force, of 66 operational B-52s and 20 B-2s. To provide sufficient bombers for our nuclear mission and to meet our conventional requirements as well, our analysis shows we need about 180 operational bomber aircraft. And, incidentally, the Bottom-Up Review agreed with that number.

One hundred and eighty bombers will give us enough for the two MRC strategy, and enough dedicated to initial qualification training. And, we must allow for a few that are going to be in depot, particu-

larly with the high modification rates we are going to have in the next few years. Of course, we must maintain a few aircraft in test configurations for new weapons and system upgrades. When we deploy to these MRCs, if bombers are also needed for nuclear deterrent posture, they must be made available from this total.

We are already playing with risks. Should another major conflict arise during the first MRC, we expect to have to send a portion of our high value assets, including our bombers and stealth precision fighters, from the first conflict to support the second one. Having to swing forces from one conflict to another adds substantial risks in being able to fulfill our missions. It's an untested strategy — one that could stretch our combat forces, strategic lift, and logistics capabilities very thin.

The fifth factor, one we must continue to emphasize, is the need to mobilize the Guard and Reserve forces immediately at the outset of any MRC. To meet this national strategy, we don't have the luxury of leaving a major portion of our force — which rests in the Guard and Reserve — in the continental United States. Today, our Guard and Reserve components fly over 40 percent of our fighters. We now have a Reserve unit flying B-52s in Louisiana and a Guard unit flying B-1 bombers in Kansas. They are integral to our operations, and we need them to join us right from the start.

"Having to swing forces from one conflict to another adds substantial risks in being able to fulfill our missions. It's an untested strategy — one that could stretch our combat forces, strategic lift, and logistics capabilities very thin."

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Like the other services, we have a number of other key capabilities in the gained — Guard and Reserve — forces and we must emphasize that mobilization be smooth and quick and that it takes place immediately. I'd like to add that volunteerism has not failed us. Just the opposite. It has worked, but in a time of great emergency, we must mobilize these forces and quickly.

"We have a large number of our operational squadrons combat-ready, but getting them all near 100 percent [aircraft, spares and people] is a different story."

The sixth issue we must address is lift, both air and sea. Although this involves primarily Air Mobility Command, it is vital to our operations and to every war fighting commander-in-chief. Our home-based force presupposes strategic lift and prepositioning. Therefore, each of us must advocate the systems we rely on to get to a war. For the future, that includes a large number — 120 if we can afford them — of C-17s, non-developmental airlift aircraft [NDAA] and fast sealift. We're also upgrading our theater airlift with the purchase of C-130Js. This aircraft will allow a greatly lower cost of ownership.

Finally, the seventh factor that limits our capacity to fulfill the strategy is the fact that we must have every one of our operational squadrons in very high states of readiness, day in and day out. That is to say, they must have near 100 percent of their number of combat-coded aircraft, a full deployable spares kit and a quantity of those air crews and ground crews required to support surge operations. We have a large number of our operational squadrons combat-ready, but getting them

all near 100 percent is a different story.

These are the seven factors we must address when considering the two MRC strategy and the force structure we need to support it.

But there is another issue we must address that will carry us beyond the tangible bounds of two MRCs. We will have smaller forces, we know that — we have smaller forces today. We must leverage technology and we must ensure it is affordable.

To strike the right balance between technology and affordability in Air Combat Command, we've incorporated a strategy-to-task framework into our planning cycle that forces us to think about what our theater operations look like today, what our operational objectives are, and what specific tasks we have to meet them in each of our mission areas. We look at various scenarios around the globe, in different theaters of operations for the next 25 years.

Last year, I talked about our 11 mission area teams in Air Combat Command that look at each of our missions — strategic attack/interdiction, close air support, rescue, theater delivery and so on to determine how we can leverage technology and more effectively accomplish our missions.

These teams identify our needs and then explore every alternative to meet them. I'd like to remind you that each of the mission area plans — we call them MAPS — developed through the system is available to our partners in industry and many have already taken advantage of them. We're into our second full cycle now of updating those MAPS — this is an annual cycle, and I would be happy to provide those plans to each of our industrial partners.

The system has been in place for over two years, and we are reaping its benefits. The annual iterations of our mission plans are helping us maintain constant communication with industry, and improving the overall responsiveness of the entire cycle to our nation's challenging security needs.

But, more importantly, they provide the right advocacy, the right justification in this new national security strategy for the programs and the systems we need because we've gone about it in a very rigorous, logical and analytical way. I appreciate your support in helping us with those mission-area plans.

This leads me to my next major theme. The easiest way to understand the tough choices we face in this tough budget environment is to look at how we plan to leverage our technological superiority in terms of seven of the missions Air Combat Command performs and the equipment we need to perform them.

First, a bit about the budget. The future years DOD budget has been established through the year 2001 and the budget for 1996 has been established at about \$246 billion. That's a lot of money. Compare that with the largest budget during the Reagan years, however, while the Cold War raged, it was over \$300 billion. It is essential that we spend our dollars wisely. However, budget restraints shouldn't be the drivers that dictate our force structure needs — winning wars should be.

As I said earlier, we have only four wings now dedicated to air superiority out of the 20 fighter wing equivalents in the general purpose air forces around the world. Air superiority is the cornerstone of the modern battlefield. We are in the process of fielding, over the next several decades, a system that guarantees we can seize and maintain it — the F-22. With such a small number of F-22s, we must also look after the needs of our entire air-to-air fighter force. We will need to equip our F-22s, F-16s, and, until they are replaced by the F-22, the F-15Cs with the AIM-9X missile with a large off-bore-sight capability and a helmet-mounted cueing system.

In the air superiority area, we need to continue to upgrade AWACS, the eyes of the air battle. With the radar system im-

provement program ongoing, we will be able to detect much smaller targets and targets at longer ranges. Combined with the Block 30/35 upgrade, it will give us a better combination of electronic support measures and active radar to identify targets earlier, to help avoid fratricide, and to improve our overall situational awareness of the air battle. Through an initiative called Extend Sentry, we plan to extend the service life of the E-3 and increase its availability through smart maintenance and upgrades for reliability and maintainability. This approach focuses on replacing old 1970s electronics in the back end of the aircraft with new 1990s technology.

We are doing everything we can to leverage our bombers to improve our ability to perform our strategic attack mission. We are fielding now 20 B-2s; we have six flying now at Whiteman [Air Force Base, Mo.]. That will give us 16 operational at any one time, primary authorized operational aircraft [PAA]. The B-2s are performing well during their first year of operational fielding. It is meeting or exceeding all of our expectations in terms of performance and reliability and maintainability. You don't read much about it because everything is going very, very well. There have been no major problems nor do we expect any. The B-2 marked another milestone in the last three weeks when it took part in its first RED FLAG. We've delivered live munitions, general purpose 2,000 pound bombs at night from the B-2 at altitude with the accuracy we expect.

"The B-2 is meeting or exceeding all of our expectations in terms of performance and reliability and maintainability. You don't read much about it because everything is going very, very well."

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We'll be publicizing those results from the B-2 at RED FLAG shortly — performed as expected.

Congress has directed us to provide to them a report on the role of bombers, the capability of the B-2 to fulfill our national security objectives, and an acquisition plan for additional B-2s. That's ongoing right now. Our challenge is to find a way to protect the ability to continue production of this valuable bomber.

"The capabilities of our bomber force underscore the need to develop and maintain large quantities of direct attack precision munitions like JDAM to give our bombers precision capability at an affordable cost."

The backbone of our bomber force, the B-1, is maturing very well. As I mentioned at the beginning of this briefing, the congressionally mandated B-1 test was an unqualified success. The six-month assessment was designed to prove that with full manning and funding for spare parts the B-1 could sustain a 75 percent mission capable rate, which is the rate I expect for any mature bomber.

During the six-month period, the 28th Bomb wing at Ellsworth [AFB, S.D.] was given the level of parts, manning and funding needed to achieve that rate. Previously, the entire B-1 fleet had been funded to meet about a 55 percent rate. At the test's conclusion, the Ellsworth unit achieved an 84 percent MC rate, far exceeding the 75 percent standard. And the non-test units, the other B-1 units, maintained a 59 percent MC rate, which was higher than the interim standard for the B-1 fleet, and higher than I had expected.

Toward the end of the test, the 28th Wing deployed nine aircraft, 700 people,

and logistics support to Roswell, New Mexico, to simulate the pace of wartime operations in an austere environment, mandated by Congress. Again, another good news story. The aircrews and aircraft flew every scheduled sortie, every one — no aborts, ground or air. Also during the test period, in October, when Hussein headed back toward Kuwait, B-1s from Ellsworth flew to the Gulf, dropping live bombs on the Udairi Range in Kuwait as part of a large global power projection mission after the build up of Iraqi military forces in Southern Iraq.

The B-1 should no longer be penalized for its past, actual or perceived, problems. Rather, the B-1 should receive the spare parts and the upgrade funding that will give the fleet precision weapons capabilities. We must continue to fund the program sufficiently to retain all 95 B-1's in the inventory.

We will also continue upgrading our remaining B-52s for both conventional and nuclear roles. In a conventional role, it will lead the way in attacking high value targets from stand-off ranges with stand-off weapons. So we need sufficient numbers of B-52s to handle both the nuclear role and the stand-off, conventional role.

The capabilities of our bomber force underscore the need to develop and maintain large quantities of direct attack precision munitions like JDAM to give our bombers precision capability at an affordable cost. So the JDAM program is absolutely crucial to the conventional weapons delivery capability of the bomber force.

"I consider the sensor-fused weapon a critical part of the air interdiction mission."

I consider the sensor-fused weapon a critical part of the air interdiction mission. It gives us a very cost-effective means of blunting and countering armor attacks. But

again, only if we procure sufficient quantities of them. We are also underway with our wind-corrected munitions dispenser program that will boost the efficiency of sensor fuse weapons by allowing for delivery of them from an altitude where we can improve our survivability.

We realize that today's fighter aircraft will make up the core of our fight force well into the next century. But, when you consider there's less money to spend on upgrades to meet our evolving needs, we conducted a major review of our fighter investment strategy. In our fighter configuration plan for the future, we looked at F-16s, F-15s, F-15Es, A and 0A-10s, EF-111s, and the F-117s.

The Fighter Configuration Plan, or FICOP, is an analytically-based approach to prioritize our fighter modifications. It is a quality process that analyzes our mission requirements, the tasks needed to fulfill these requirements, and deficiencies in current systems that might hinder mission completion. As we identify high priority missions, we can then rank order the modification programs that are most likely to fix these deficiencies. The overall goal is to fund the modifications and technologies that will give us the greatest combat effectiveness for our money and will reduce the cost of ownership of existing fighters — high payoff at affordable cost through an analytical process. You also have access to our Fighter Configuration Plan in industry.

The following discussion reflects the contributions of the Fighter Configuration Plan.

We use our bombers for strategic attack and air interdiction, but more often than this the mission falls to our attack aircraft, typically our F-15Es or F-117s, or F-16s, and our F-111s as long as they remain in the inventory.

Now, we are forced to minimize expenditures on the F-111 in line with the decision to retire this aircraft after 1996. But

until our bombers have sufficient precision capability, we cannot completely compensate for the loss of the F-111. The time frame for the B-1 to get a precision munitions capability continues to slip, not because of technical problems, but because of funding shortfalls. This leaves a gap between the F-111s retirement and when the B-1s can assume its role.

By the end of FY96, the F-4G Wild Weasel will retire. Its capability will be replaced by the F-16, equipped with the HARM [High-Speed Antiradiation Missile] targeting system, performing well. The reconnaissance version, however, the RF-4, will also retire in 1996. We hope somehow to fill this gap in tactical reconnaissance with a podded, all-weather, day/night electro-optical simple, reconnaissance ability. And we plan to demonstrate some RECCE pods in the coming year for the F-16 and the F-15.

Last year I told you we'd like to have 30 or 40 more F-15Es if we could afford them. That hasn't changed. The demand for this aircraft still outstrips the supply. We lack sufficient attrition reserve and back-up inventory aircraft to meet all of the requirements levied on today's F-15E force. So, we do need 30 or 40 more in that category in order to ease the problems we have with that system — it's in very high demand.

"Last year I told you we'd like to have 30 or 40 more F-15Es if we could afford them. That hasn't changed."

We'll also continue to upgrade our F-16s for two primary reasons:

First, we need to make them more capable across the board for our active, Guard and Reserve units. Second, to help sell F-16s to our allies and security partners so they operate the same equipment we do. There are several modifications

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that would make the F-16 an even more capable aircraft than it is today: an internal FLIR/targeting system, a higher resolution synthetic aperture radar, a digital terrain system — state of the art — and a color moving map system. Those four mods would give our F-16 fleet significantly improved capabilities and are also the same kinds of capabilities many of our allies and security partners seek.

Like the F-15Es, there is a shortage in the F-16 attrition reserve. If we don't buy more, we won't be able to maintain the 20 fighter wing equivalents much beyond the turn of the century; there will be a gap in being able to field 20 fighter wing equivalents. Of the two aircraft, the F-16 fleet is shrinking faster. We seek to procure more F-16s to fill this gap.

Our Air Force continues to cherish another mission: close air support. We are actively upgrading both the F-16, Block 40s and the A-10 aircraft. The F-16 is getting an improved data modem for communications and laser spot tracking capability. In the Block 30 aircraft designated for CAS, we will get the same data modem, improved night vision goggles, laser spot tracker for the LANTIRN targeting pod, and a compatible cockpit lighting system in the Block 40. So the F-16 is getting a significant upgrade for night, close air support.

Our night vision goggle program and the A-10 lighting compatibility program that goes with it have been in use since July of last year. In fact, we took our night vision goggles to Kuwait with the A-10s last October. It worked very well. Our AIR WARRIOR exercise is one in which we've used the night vision goggle system. Those who claim we have abandoned close air support haven't been paying attention to all we have been doing in the investment part of that area as well as the operational part.

We have these upgrade programs for both of our close air support aircraft. And,

of course, we're putting in a new Airland Composite Wing at Moody [AFB, Ga.] that is devoted to supporting ground forces with close air support.

Both our air interdiction and close air support missions will be performed far more capably in the future with Joint STARS [Joint Surveillance Target Attack Radar System]. Joint STARS will give our ground commanders the ability to see vast expanses of the battlefield at a glance, literally revolutionizing the way we fight. The Army will find Joint STARS indispensable as they benefit from its capabilities even in daily training. We've already identified a need for the Army and Air Force, to develop a set of common targeting procedures. Now, Joint STARS must send targeting information to the Army and Air Force in two different languages. We should be able to solve that problem.

"Like the F-15Es, there is a shortage in the F-16 attrition reserve. If we don't buy more, we won't be able to maintain the 20 fighter wing equivalents much beyond the turn of the century."

Joint STARS will no doubt be just as popular as AWACS — we'll need four or so at every major joint exercise, national training center, and the JRTC [Joint Readiness Training Center] at Fort Polk. It will also play an important role in situations short of war. It will become one of our most dependable means of projecting presence and supporting our theater commanders when regional tensions arise. Peace-time requirements will quickly overtax the 20 Joint STARS we are programmed to buy. Add to our current taskings these considerations: the two MRC requirement for a broad regional front; future unanticipated contingency requirements;

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counterdrug operations; the need to support the National Training Center and the Joint Readiness Training Center; routine training aircraft and those out for depot maintenance. When you start putting numbers aside each of those categories, you run into numbers larger than 20.

In short, we need to program for more. We just had a major summit with the Army and decided we may need on the order of 40 to 50 JSTARS to meet our U.S. commitments alone. In addition, we understand that NATO has a requirement for a ground surveillance program and we think the best way to support that program is with Joint STARS because of the interoperability and commonality of command and control systems we can derive by working Joint STARS into the NATO arena, just as we did with AWACS.

C-130s have now been fully integrated into Air Combat Command and into the combat air forces around the world. They're flying missions all over the globe: Southwest Asia, Haiti, Bosnia, Somalia. We need to continue upgrades to the C-130 force. We will also begin acquiring the new, C-130J model in December of next year. The J Model has better engines, better flight deck, better cargo handling system that will also allow us to do our combat delivery mission better, with fewer people, faster, and at a significantly lower cost of ownership.

We continue to struggle to meet the demands of our reconnaissance mission. Reconnaissance and surveillance, our force enhancers, remain a high priority. We have a good support for reconnaissance with JSTARS. Although it is primarily a targeting system, it still provides us with a great deal of reconnaissance and intelligence information. We are trying to benefit more from the space assets, both from Space Command and from the NRO [National Reconnaissance Office] assets that are in space to improve our reconnaissance and surveillance capabilities.

And we haven't given up on upgrading the U-2 and the RC-135 with improved sensors and improved reliability modifications. We are not yet ready to accept what is programmed as advanced development projects through the DARO for the next two or three plus or two or three minus until it has proceeded a lot further along in its development and fielding.

And there's still hope out there that we can field a podded, RECCE system on an F-16 or an F-15, and we are looking forward to demonstrations of that capability this year.

An area that has been given a lot of emphasis this year is theater air defense, both active defense and, from our standpoint, attack operations, or counterforce operations to attack theater ballistic missiles. However, operational capability is still several years away. We're exploring current and new sensors on the F-15E, the F-16, the B-1 and the U-2 to include improved SAR [synthetic aperture radar], automatic target recognition, target cueing, enhanced moving target indicator and GMTI [ground moving target indicator] as well. In the missile defense area, boost phase intercept is an interesting concept, although with current technology it is virtually impossible to do because of the time compression. And, in the long term, we see an application of the airborne laser for that mission, but an operational demonstration is several years away. We must continue to support a live demonstration of the ABL program. With an exercise coming up in March, ROVING SANDS, the Air Force will demonstrate a new IR sensor on the RC-135 Cobra Ball aircraft in a theater missile defense role.

Our priorities with theater missile defense are:

First, attack them before they launch.

Second, attack them just after they launch, before the TELs [Transporter Erector Launcher] and the command and control system have moved away.

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And third, try to get them in the boost phase, the most difficult. And, we still support all of the active defense systems in the Army.

My third theme today is our need to continue to insist on a balance among readiness, force structure and modernization. Some in the new Congress have expressed concerns about the readiness of our Armed Forces. Some are concerned that we've drawn down our forces too far.

"We should reevaluate how we direct the money we are given to better balance our spending on force structure, readiness and modernization. In my view, the emphasis should be equal. It is not today."

My conclusion is that our readiness is good at the present time. But, it's an area that certainly merits our constant attention and has several dimensions to it. We should reevaluate how we direct the money we are given to better balance our spending on force structure, readiness and modernization. In my view, the emphasis should be equal. It is not today.

Some modernization programs are suffering. Here are some recent examples. We've delayed the F-22 by an additional year, putting its date of initial operations at 2004. It could stretch out even longer. The F-22s research and development was cut an additional \$200 million for Fiscal Year 1996 and we cannot afford to slip the program any further.

Funding for a new nondevelopmental airlift aircraft has been cut by about half, and the C-17 program has been stretched as well. The annual buy of C-130Js has also been reduced. Until recently it was assumed there was enough airlift to support the national security strategy. As we

look closer at our requirements, we see this may be an erroneous conclusion.

Much of the funding cuts from these modernization programs have been redirected toward readiness: funding pay raises, spare parts, aircraft depot maintenance, real property maintenance and training and exercises.

We have been aggressive in the Air Force, as you know, in downsizing, to meet our post-Cold War force structure requirements, but we haven't been as aggressive about cutting our support structure, an area that may help us pay for essential modernization. Many of you probably know how I feel about what I call our "tooth to tail" ratio. We've cut more from operations — our teeth — than we have from support — our tail. Let me review a couple of numbers. We have cut roughly 50 percent of the Air Force's operational combat capability. We've cut our fighter force by almost 50 percent. We've cut our bomber force by almost 70 percent. But we only cut about 15 percent in our support structure: depots, laboratories, test facilities and general overhead. Until we get our "tooth to tail" ratio back in balance, we're not getting the value we could from the money we are spending on defense. We'll keep directing funds to excess infrastructure and excess capacity, instead of preparing and modernizing our front line forces. But, as we all know, this is tough to do.

"We have been aggressive in the Air Force, as you know, in downsizing, to meet our post-Cold War force structure requirements, but we haven't been as aggressive about cutting our support structure, an area that may help us pay for essential modernization."

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Part of cutting the tooth portion of the ratio means we've cut the number of new aircraft — current systems — we buy. For example, this year, like last year, we didn't budget for any new F-15s or F-16s. We normally keep attrition reserve aircraft available to replace those we expect to lose one way or another. And we are seeing our attrition reserves grow smaller and smaller.

So until we field significant numbers of the F-22 and see the next generation affordable fighter come along, we certainly must make interim buys of F-15Es and F-16s to maintain the 20 fighter wing equivalent beyond the turn of the century.

But most people realize just fixing "tooth to tail" won't solve all our problems. We are going to have to approach this from a national perspective. We are going to have to reduce overlapping and less efficient means of delivering military power to generate necessary investment dollars. If looked at impartially, I am confident that our Air Force is quite competitive when considering investment versus combat capabilities.

As you can well imagine, I closely monitor the impact of our OPS TEMPO on our readiness. Lately, it has become a visible issue. Our OPS TEMPO is high; we are busy; and we are engaged. But I want us deploying and exercising our combat skills around the world — it is our primary mission; that is our job; and we do it better than any other air force.

Since the bulk of our combat air power — 90 percent — is within Air Combat Command in the United States, it is essential that we venture away from our home bases for more exercises and training, not fewer.

Such training opportunities demonstrate our reach; they put a formidable presence in regions where we no longer have permanently stationed forces, and it gives our crews valuable training that keeps them ready to deploy on short notice. Other

training exercises give us experience working with foreign nationals while encouraging the use of U.S. weapons, U.S. tactics, and U.S. procedures. So if we are deployed away from our homes 60 to 90 days a year, that's good; that's healthy; and that's expected.

I do worry, however, when our people are gone from their home stations more than 120 days a year, over and over again, year by year as happens in some high demand weapons systems. Today we have nine weapon systems that keep their people away from home over 120 days a year: AWACS, rescue, AC-130s, C-130s, ABCCC, F-4G, U-2, RC-135, EF-111, and Compass Call. These systems are used heavily during the peacetime commitments we've seen recently. They are in heavy demand by all of the CINCs around the world and such lengthy deployments eventually affect training and quality of life — both readiness issues.

"I do worry, however, when our people are gone from their home stations more than 120 days a year, over and over again, year by year as happens in some high demand weapons systems."

I've asked my squadron commanders — those directly responsible for sortie production and training — how they assess our readiness in light of contingency operations. They tell me that, overall, the force is ready. And I agree. Our rapid deployment of deterrent air power to the Middle East in October, when Iraq threatened Kuwait, is one positive indicator. We are ready; we can be there. However, our commanders have expressed concern that these contingencies do not offer sufficient combat training operations while deployed for their air crews.

Those taking part in SOUTHERN

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WATCH, for example, find there are few weapons ranges and limited low-level training in Southwest Asia because of the enforcement of the UN resolutions for the no-fly zone. During a typical three to four hour sortie, our crews are getting only two or three quality training opportunities and these are not necessarily those needed to keep combat skills razor sharp.

We've concluded the current 90-day rotations impact training and readiness. Longer deployments without adequate training opportunities will further erode combat readiness — a new dimension to this readiness equation. That's why we can't let up on the pace of our combat training at home, our training and exercises overseas, and our other ways of getting more intense combat readiness training.

All of these issues point to the fact that we must continue to balance our readiness, our force structure and our modernization requirements.

"But people who simply compare the performance of the F-15 to the Russian SU-22 Flanker and the proposed Eurofighter overlook the dynamics of the new operational strategy — we have to be prepared to fight anywhere in the world, not in our own backyard, but, as a primarily home-based force."

If we could fast forward to the year 2020, we would see the United States positioned as the preeminent leader on the global power equation. If we plan to modernize our force in the following areas, we can look forward with certainty that we will be the world's leading combat power.

Our main priority for the near term is the F-22. There is an absolute necessity

for its stealth capability in a future air combat environment.

Here's another dimension on this F-22 question — some say there is no enemy fighter that can really threaten our current air superiority fighter, the F-15. But people who simply compare the performance of the F-15 to the Russian SU-22 Flanker and the proposed Eurofighter overlook the dynamics of the new operational strategy. Remember, we have to be prepared to fight anywhere in the world, not in our own backyard, but, as a primarily home-based force. I can't stress that enough. We have to answer the call, deploy our F-22s air superiority fighter immediately — with limited support structure, perhaps no infrastructure where it is going — turn around, win the battle for air superiority within a day or two by an overwhelming margin — all in the first four days in contested air space.

Somebody said we play away games, and yet we have to win by lopsided scores. This is not a sporting event. We must win by lopsided scores. Therefore, we need to have dominant advantage in air superiority, not just a marginal advantage over what the other fellow may field, either in fighters or integrated air defense systems.

We need the F-22.

The inherent design of the F-22 should allow it to spin off derivatives that assume other missions, giving us a maximum return on our investment in the F-22 technology. We are spending upwards of \$18 billion on the F-22 research and development. We ought to be trying to find ways to maximize our return on our investment: new technology for propulsion, for avionics, for manufacturing, for materials. The family of new technology could include aircraft with a more capable, more robust air to ground capability, like an F-22E, an aircraft analogous to the F-15E. We need a SEAD version for suppression of enemy air defenses, a RECCE version and perhaps even a Navy variant if they seek a

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high-end, longer range aircraft. We need to capitalize on that investment. We are putting together — funded — a derivative program for the F-22.

The other new fighter development program — the only other new fighter development program — is the JAST [Joint Advanced Strike Technology] program. In the next 50 years, we're going to have only two fighter programs in my opinion: F-22 and JAST. We've got to find ways to satisfy all of our customers out of those two programs. Therefore, we in the Air Force need the JAST program to replace the F-16. It is the low-end affordable fighter which we are able to buy in large quantities to fill out our force structure, and it complements the F-22 and its variants.

JAST should also give us a fighter for export. Minus the sensitive technologies, it can compete with foreign aircraft like the Russian MIGs and the French Mirages and even our own F-16s and F-18s as they become too old and are competed for by other nation's aircraft. The export portion of the JAST program should get more attention. Others need the JAST program. We need the spin off on ASTOVL [Advanced Short Takeoff, Vertical Landing] aircraft for the Marine Corps, and perhaps a Navy fighter to replace the F-18 eventually. Although, I am not sure the Navy knows exactly what it wants out of JAST yet.

Those two programs are critical to us for the future — F-22 and JAST — and we're paying a lot of attention to them and trying to influence them.

We need to put more emphasis on electronic combat. There is a proposal to do away with the EF-111 and cancel the MSIP, the upgrade program; it's now threatened. I don't see any adequate alternative to the EF-111 and upgrading with its improvement program out there yet. I am not yet ready to accept the fact that we can do away with it.

Looking down the road, we must en-

sure the JDAM program stays on schedule. It will add a significant capability.

With the cancellation of the TSSAM [Tri-Service Stand-off Attack Missile] program, we still need an air delivered stand-off attack weapon, one that gives us greater stand-off range than the current systems we are buying for the B-52s, such as the Have Nap program. So, we have structured a two-phase program for stand-off weapons; one in the near term that will modify additional air-launched cruise missiles to a conventional version, and one that will buy more Have Naps so we can put a capability today on the B-52 with weapons that already exist and work well. Then we are putting together another new program that will be the program for the long term to replace TSSAM.

We are looking at various programs out there that can help provide that capability like a powered version of JSOW, or another version of TSSAM that's more affordable and works better. There are several other candidates out there that can fulfill that. We are putting together a mission needs statement, an operational requirements document and the programmatic to get on with that program very soon.

"With the cancellation of the TSSAM program, we still need an air delivered stand-off attack weapon, one that gives us greater stand-off range than the current systems we are buying for the B-52s."

Another priority — C⁴I [command, control, communications, computers, and intelligence] — is important to us to reduce the cycle time from detection of targets to the attack of those targets. We are getting better and better at that since the end of the Gulf War, but we need to continue to

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drop our cycle time to the 12-24 hour period for planning and to within minutes for real-time execution. So we are pushing JTIDS [Joint Tactical Information Distribution System] for our fighters as well as our command and control systems.

We need a lower-cost version of the MIDS system in order to fulfill that requirement in our fighters and we are putting that at a high priority. We are continuing to field more advanced version of CTAPS, the joint standard for interoperability of command and control systems. We want to buy more of the modular control equipment operations modules for our ground-based radars and upgrade them with a better capability.

Finally, we need to continue to strive for improvements in reliability and maintainability, as we go through this analytical process for determining where the high payoff is. In this new era where we are home-based and have to go to places that don't already have a full infrastructure, reliability and maintainability rank very high.

I've covered a lot of ground here so let me reduce this to a quick summary. The two MRC situation is our most stressing combat requirement. We may be comfortable participating in those operations other than war, but I won't be happy until we are satisfied we can handle the two MRC scenario well.

We must maintain sufficient force structure to provide the leverage we are counting on to achieve an early victory in any major conflict. We cannot sacrifice any more combat capability and still do our tough job.

I suspect many have not yet fathomed just what it means to be a home-based expeditionary force. Believe me, we are one. We must have and sustain the ability to project our power across the globe. Bombers are one of the cornerstones of our power projection strategy. They must be protected.

We must reduce our support structure and the indirect operations part of our budget. We can do this by consolidating depots and laboratories and large test centers and eliminating some of that training "tail." We must increase our investment budget, the R,D&A portion to protect modernization and key industrial bases.

And finally, we must continue to emphasize future readiness in the form of modernization programs: the F-22, bomber upgrades, Joint STARS, JDAM, JAST, AIM-9X, helmet-mounted cueing system, C⁴I mods like JTIDs, CTAPS, MCE, F-15E (more and upgraded), F-16s (more aircraft and upgraded), upgraded C-130s and the C-130Js to stay the course for the future.

You have a first rate Air Force today: leaner, restructured, capable, with quality, motivated people. We are busy. We are engaged. We are deploying and employing air power in many, many places around the globe today. It is demonstrating our capability as a critical part of the National Security Strategy. Your Air Force is proud and ready. If we can continue to balance the three pillars of readiness, force structure and modernization, I am confident we will be able to perform our global power missions well into the future the way you expect us to. I apologize for this being a bit long. Thank you very much, and I am ready to answer your questions.

QUESTION AND ANSWER SESSION

GENERAL HATCH: *Thank you for a very comprehensive presentation, Mike. You anticipated many of the questions. Let me remind our audience that General Loh will have a press conference after this, and he'll also be available later today. So, if your question isn't in the stack, there are other opportunities to ask questions. You said readiness in AAC is good, but are these additional missions of peace-keeping and peace-making driving readiness to a point where we have to be worried about our combat capability?*

GENERAL LOH: I mentioned part of that in the presentation. When we go on most of these operations today, we are unable to maintain our combat-ready skills. We are doing a lot of flying, but not in an integrated, joint way, in a simulated threat environment or a real-threat environment. So, when a squadron comes back from a 90-day deployment, it typically takes us two or three, or in some cases four months, for that squadron to get back up to high levels of readiness where it would be prepared to go to tomorrow for a war in Korea or in the Middle East.

I am tracking this a lot more carefully. For example, when we deploy to the Middle East, we cannot practice LANTIRN [Low-altitude Navigation and Targeting Infrared for Night], low-level flying at night. There are things we can't do when we go to places like Bosnia, and Turkey. When those squadrons return, it takes some time to get back up to speed.

The force structure we're using to support these missions is really unprogrammed and unaccounted for. Back in July and August during the little confrontation with North Korea, we looked at all of our war plans, and we listed the squadrons that need to go early. When we looked where those squadrons were, they were already deployed someplace else. Our AWACS, U-2, RC-135, and EF-111 units were already deployed, and those are the very ones you need to get to Korea fast. Those are the elements of readiness people don't see day-to-day, but we are dealing with them.

In terms of spare parts and the crews, we're in pretty good shape. We're in better shape than the other services and we intend to stay that way. There are many dimensions to the readiness equation.

GENERAL HATCH: *Thank you, General Loh. The second question regards the B-1. You said the test group achieved an 84 percent mission capability rate and the others 59 percent. We know your fleet goal is 75 percent. Is that goal reachable and sustainable?*

GENERAL LOH: The mission capable rate that we experienced during the test of B-1s turned out to be 65 percent overall — 84 percent for the test unit and 59 percent for the others. We want to increase that by 10 percent.

It wasn't just 10 percent more, but get them at the right place at the right time. There are some simple R&M [reliability and maintainability] mods that we can make for about an \$11 or \$12 million dol-

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lar investment that will increase the MC rate another three percent. That gives you 6 out of the required 10 percent, so we are buying additional spares to get us only four more percent of MC rate. This is the most efficient way to get to the 75 percent level.

We already have those four percent of spares programmed, so it didn't add to our budget. I think it is a very smart way to do it and I commend all of the people in our logistics system, both in our command and in Air Force Materiel Command. They sat down and figured out how to get into the lean, logistics mode and do a lot of the things like the smart folks are doing in FEDEX and other companies that are getting parts to the right place at the right time.

GENERAL HATCH: *Thank you, General Loh. Here is a second question on bombers. You said the desired force structure was 180 operational bombers. Given current budget levels and those projected for the future, will you keep that number as your desired goal?*

GENERAL LOH: It is a goal. Right now, we don't have that number of bombers; we are down to 120 or so. In the Six-year Defense Budget, we have a plan to grow to about 150 through improvements to the B-1 and by buying the O&M [operations and maintenance] for them year by year.

We still need about 180 if we are going to do our missions without having to depend on swinging them extensively from one theater to another and still providing some for nuclear alert. We need to put a marker out that says 180 is about the right number. That is the number that our Bomber Roadmap came up with in 1991, that is the number from our 1992 analysis, and that is the number that the Bottom Up Review said was the proper number for bombers. I think it is a good number. Whether or not we can ever get there is another story, but we need to make sure that all of us understand the need.

GENERAL HATCH: *Thank you,*

Mike. We have a number of questions on tactical reconnaissance. You said the RF-4 would retire in 1996. Could you expand on tactical reconnaissance, ATARS, and future capabilities?

GENERAL LOH: I beat up on everybody because we don't have a pod on the F-16. We went through the ATARS program, and as the commander of ASD [Aeronautical Systems Division] at Dayton at the time, I am partly responsible for not getting it fielded. For lots of reasons — contractual, technical, integrations, and system engineering, we couldn't get it fielded. We could have fielded the system if we had stayed the course, but we weren't willing to keep putting more money into it. At the same time, we were gaining success with other methods of theater level reconnaissance, from space particularly and from other strategic systems like the U-2.

There is still a need for immediately responsive, theater-based, tactical level reconnaissance capability — manned or unmanned. Manned has more flexibility, so we are still after that pod. We don't need them in the same numbers as years ago because we have space assets that provide a tremendous capability and are getting better all the time. But, we need some capability and will pursue it. I wish I could find a guy who could put together some simple cameras, place them in a pod, integrate it, make it work, and fly it for me. All I've been seeing is paper concepts for the last 15 years.

GENERAL HATCH: *Thank you, Mike. Here is a question on tactical airlift and the C-130Js. As tactical airlift requirements are always difficult to quantify, how will you articulate these needs in your testimony to Congress in the coming year?*

GENERAL LOH: Sure. One of our mission areas is intra-theater airlift. We call it "combat delivery" because the scope of missions that are performed by the C-130 today are much greater than they

have been before. We have a whole series of tasks and objectives that we perform with the C-130. I invite you to get a copy of our mission area plan for combat delivery. It outlines all the reasons why we need today's C-130s and tomorrow's C-130J. We can quantify the numbers required for the various capabilities in each mission area, and I'll be happy to talk about it before Congress. It is a tremendous capability.

GENERAL HATCH: *Thank you, General Loh. Here is a final question. Congress is working hard to put additional funds into the defense budget. When you testify and if asked about your priorities to use any additional funds, what systems would be at the top of your list?*

GENERAL LOH: Well, I've mentioned some of them in this presentation. If we had an additional billion dollars or two, and incidentally, I don't know how that is going to happen, but if we do, we need to put money into the F-22 program to restore the previous cut. We need to put some into strategic airlift, the C-17 and the NDAA program to make sure that it is more efficient. Then there are other upgrades like the AWACS, readiness upgrades — buying a few more F-16s and F-15s — putting more reliability and durability into our engines with the smart solutions that have come out of a recent series of problems with engines. Others include advanced munitions, alternative for TSSAM [Tri-Service Standoff Attack Missile], and there are a half dozen or so things in that category that we see. But, the two big ones are restoring the \$200 million for the F-22 and getting a more efficient schedule for the strategic airlift program.

GENERAL HATCH: *Mike, thank you very much for being with us today, and thanks for your contributions to this symposium.*

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General Ronald W. Yates
Air Force Materiel Command

REENGINEERING FOR SUCCESS IN THE 21ST CENTURY

Thank you, Monroe. I am the tail of Mike Loh's [General John M. Loh] tooth to tail ratio.

It is interesting to reflect that it was 50 years ago today that the photograph of the Marines raising the American Flag on Mount Suribachi was taken. A victory that extracted enormous sacrifice from the United States — 27,000 Marine casualties — to secure an island which was to provide an alternate landing field for B-29s which were stationed in Saipan so that when they came back out of Japan if they couldn't make it back, they had a place to land. The success of the air war that was waged by the same B-29s stopped the carnage that had occurred on Iwo Jima and we didn't have to repeat that performance again and again. It is interesting though and it is a point of great pride for us all to reflect on what those men did those 50 years ago.

It was the muscle of the American industrial engine that won that war and its postscript was unprecedented: economic growth for American industry and for our nation. To satisfy the insatiable worldwide appetite for consumer goods, high centralized and hierarchical industries managed vast numbers of people trained to perform just a few specialized tasks.

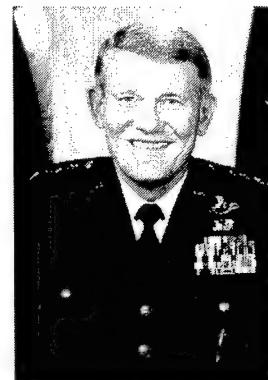
Today the postscript to the Cold War is still being written, but the Gulf War points to emerging premises of future warfare. It says it is going to be about the power of information, precision munitions, stealth and joint operations. Likewise, ef-

fective industrial organizations will pursue excellence by exploiting information technology to allow decentralize execution, while using team oriented management to unlock human potential and improve efficiency.

In our business, politics greatly impact us. Unfortunately, many politicians have the Paul Masson [wine] theory of government: we deal with no problem "before it's time." Nevertheless, politics and continuous change define the environment that we operate in, and neither will soon leave us. Therefore, the Air Force has welcomed the President's initiative on Reinventing Government and acquisition reform legislation. And, we intend to use them to the greatest possible extent.

As a matter of fact, I believe the Air Force has done more to reinvent than any other federal agency. We embrace change; we even drive change. And, we've been doing that for some time now. At my command's predecessor commands — Air Force Logistics Command and Air Force Systems Command — they were willing to deal with challenges, adopt innovation and ask, "Is there a better way?"

Five years ago, the Air Force Logistics Command began organizing its air logistics centers around product lines — around weapons systems. They called it the "Company Concept" back then. This process started the move away from centralized maintenance and item management to decentralized, product focused organizations.



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Five years ago, Air Force Systems Command adopted a concept of integrated product development to break down the walls between our functional organizations.

More than five years ago, Air Force Systems Command streamlined the RFP process [Request for Proposal] and early industry involvement in that process. We instituted contractor performance acceptance reports. Ten years ago, we started the certification of acquisition personnel.

"I believe the Air Force has done more to reinvent than any other federal agency."

So, the move toward acquisition reform is not new. We read a lot about it now and that is good. There is more to do; that's a certainty. But, we need to remember we've been at this for some time.

When the two commands merged, incorporating all these innovations into a newly integrated whole really came naturally for us. We used total quality and we used contemporary management thoughts; all that was available. We looked for a leaner, more integrated and focused organization. And we put these principles into practice, not just into advertising. We linked with and listened to our partners, our customers, the warfighters and the industry. We empowered our workforce and we tried to push our decision levels down.

Our guiding philosophy, since we formed the command, has been integrated weapon system management — a single face to the customer for every system. This has meant a life cycle perspective on weapons systems where we didn't have a life cycle perspective before. This is an organization where "pay me now or pay me later" really means something to one guy. He is the guy who develops it, fields it and who has to pay the price if he doesn't look after the reliability, maintainability and sustainability of the system.

We merged over 980 programs when we formed the command two and one-half years ago into 106 programs today. That is taking related programs and putting them together or in the same portfolio. What this has done is given us a more global view of each individual program and how it fits into a bigger whole.

Underpinning this whole thing has been the integrated product teams. Our teams include not just the people you'd expect like our engineers, our financial managers, and our contracting officers, but, also scientists from our laboratories, the warfighting community, many from industry, DLA [Defense Logistics Agency], which is a group we've been ignoring, and even as we get into contentious problems, those people who are causing the contention, be it the people from OSD [Office of the Secretary of Defense] or even the GAO.

Let me tell you what this looks like in reality. What it looks like is a program office, which has all of the ordinary things you'd expect; maybe more representation from the laboratories than you might expect. But also it gives the program manager control of all the assets on the production end — the Air Logistics Centers. What the program manager has now are all those people at air logistics centers who are involved in item management, all those who are involved in production management, all those blue collar workers who are involved in production, all work for one guy. Whether or not we are doing maintenance on the system or doing mods to the system or buying new systems or components thereof, he is the guy that is in charge.

"Our guiding philosophy, since we formed the command, has been integrated weapon system management — a single face to the customer for every system."

That is a good philosophy, perhaps, but you might ask, "what do we get from it?" Let me give you just a couple of examples. The F-15 SPO [System Program Office] depot production IPT, was faced with a case where we never delivered an F-15 on time. We had unpredictable flow rates and overruns. We then revised our processes.

The F-15 line went from no aircraft on time to having delivered 284 of the last 286 airplanes on time. At the same time, they dramatically reduced the work hours and the flow days and the quality has been essentially perfect.

We cut the B-1 program depot maintenance from 120 flow days to 89 flow days. That saved Air Combat Command over \$17 million.

We saved \$11.8 million on the B-52H program by cutting 15 percent of the program depot maintenance hours. In 1993, the Oklahoma City depot delivered 40 percent of their airplanes on time. Last year they delivered 100 percent of their airplanes on time.

We achieved these results by putting experts at the point of contact in teams, so they could share their lessons learned, eliminate bottlenecks and streamline their processes. That kind of insight could never have been generated by a centralized agency far removed from the work or the warfighter.

We are starting to see these ideas catch fire in OSD. Colleen Preston [Honorable Colleen A. Preston, Deputy Under Secretary for Acquisition Reform] has formed teams to look into adopting DOD-wide IWSM [Integrated Weapon System Management], IPD [Integrated Product Development], and Clear Accountability in Design [CAID], which is one of the major things which the CEOs of our prime contractors asked us to work on, which delays the government from taking over "specs" until much later in the development process. She is looking into adopting the integrated acquisition strategy pro-

cess and the lean aircraft initiative, OSD-wide, and I'll mention more to you about that later.

Secretary Perry [Honorable William J. Perry, Secretary of Defense] is counting on these reforms to be significant; in fact, so significant they will help us fund our modernization programs. That is how important these things are. We've got to make this work because that will be the funding to maintain our combat capability and also to sustain our industry.

Industry incurs about 30 percent additional cost or premium on government contracts compared to about 10 percent on similar civilian contracts. The recent Coopers and Lybrand study identified that eight of the top ten drivers are in DOD's control. To get those changed, you must drop nearly half of the cost premium.

Congress has helped us with the 1994 Federal Acquisition Streamlining Act. Now we and DOD need to get on the stick to provide the required policy relief.

We have one pilot program in which TRW's Transportation Electronic Division will make military electronic components for the F-22 alongside civilian automobile electronics. That will minimize costs, eliminate the need for dedicated military production lines and create a more robust and efficient manufacturing capability. To test these concepts further, DOD has waived 18 socio-economic and procurement requirements on our five pilot programs.

"We cut the B-1 program depot maintenance from 120 flow days to 89 flow days. That saved Air Combat Command over \$17 million."

Of those programs, four of the five, are Air Force programs. They are JDAM [Joint Direct Attack Munitions], JPATS

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[Joint Primary Aircraft Training System], Commercial Derivative Aircraft, and Commercial Derivative Engine, which gives us the opportunity to lead the way further in acquisition reform.

The key success on these pilot programs is the changes that are being made are not coming from somebody outside the programs, but from the programs themselves. JDAM is a good example. The original solicitation had more than 125 MILSPECs and standards and the statement of work was 135 pages long. With the reforms applied, JDAM went to zero MILSPECs and standards and a 7 page statement of work. The original unit program cost was estimated to be about \$50,000 over the life of the program. With the current reforms and innovations made, we now expect it to be half that.

For many years, we've had a philosophy that said, extra spares, extra inventory, extra aircraft, and we'll be safe. We can't afford that any longer. We must take some risk. We have to focus on just-in-time inventory versus just-in-case inventory.

Two-level maintenance has shown us the way to do a lot of this. Through two-level maintenance, we eliminated 6,000 maintenance positions in the combat commands and reduced their deployment footprint. Don't forget that of all the Air Force people we sent to Desert Storm 63 percent were logisticians. Just let me mention the system that has been under a two-level approach the longest, F-16 avionics. We started with a pipeline time of 54 days and now it is 9 days. It has been 9 days or less for almost three years.

Two-level is a way of life in the Air Force. We are expanding it every day. In fact, there are big bucks to be gained should we implement this Air Force-wide, which we intend to do. If we are aggressive about it, we can save more than half a billion dollars in terms of the inventory we carry in the Air Force.

Lean Logistics: let me tell you what lean logistics is. It is two-level maintenance, but more. There are some components we deal with day-to-day which we cannot put under two-level maintenance. They just don't have the reliability and maintainability. If we can afford the mods to those, to put them under two-level maintenance, that is wonderful. If we can't, there are still portions that can use parts of three-level maintenance and still shorten the flow time and the processes through the repair shops regardless of where the repair shops are located. But lean logistics goes beyond that.

For many years, we've had a philosophy that said, extra spares, extra inventory, extra aircraft, and we'll be safe. We can't afford that any longer. We have to focus on just-in-time inventory versus just-in-case inventory.

In lean logistics, we are talking those principles plus consolidation of inventory. By that I mean lean-base levels backed up by consolidated serviceability stock, probably at a depot -- but it doesn't have to be. We have considered it. In fact, the first test was at Dover [AFB, Del.]. We've considered locating it elsewhere as studies show it is best to locate it at a depot.

Lean logistics means support to the customer based on actual demand. When we take a part out of consolidated inventory, we put one into repair at the depot. So, we are not trying to forecast warfighting commands consumption and then putting in a quarter's worth of items to be repaired. What we are doing is fixing one when we use one.

Lean logistics also means "reinventing" the Air Force. As we prove ourselves and as we prove we can meet

these reduced inventory and lean levels, we need to look at where we are at WRM [Wartime Readiness Material]. It may mean that we can lean out our WRM levels or at least centrally control it, which will do a lot for us in terms of efficiency in distributing spares.

It means some different things from industry. As Mike Loh talked about in his speech on the B-1 operational readiness assessment, we used many lean logistics principles. It is not only the work that is done at ACC and our depots, it was the work that was done in industry because industry met the same kind of demands for lean logistics. Industry inducted a part the day it showed up. We used premium transportation — Fedex. These are the things we are both going to have to take full advantage of.

We've done a lot, but you must remember, even if you are in the lead, if you stand still, you are soon going to become a speed bump. So, we've got to look at a lot of things in the future. We were all influenced by *The Machine That Changed The World*. By the way, the guy that kicked this off is Tom Ferguson, and he said surely these same principles must apply to aerospace. So we've entered into a three year cooperative research agreement with MIT that we call the Lean Aircraft Initiative. Nineteen of our leading aerospace companies and the tri-services are all actively participating in this consortium-like effort. We and industry contribute funding and we all share in the results. The goals include shorter design times, smaller inventories, fewer management layers, less capital outlay, less cycle time and fewer suppliers. We are using some of these principles in the F-22 and JDAM and will use them on JAST.

Tying this all together, let me tell what I talked about with the Commission on Roles and Missions last week. We built a highly integrated organization with a

tightly woven linkage to our warfighters. By staying close to the warfighters and upholding our partnership there through purpose — which is really to put bombs on the target, we have started revolutionizing acquisition and sustainment. Our longstanding, permanent commitment is to continuous improvement through integrated management with a focus on the warfighter.

Once again, people are talking about centralization. I told the Roles and Mission Commission, as strongly as I could, that we need to maintain separate acquisition communities for each of the services. Centralization did not work for the French or for the British because it decoupled the warfighter from the development process. The costs soared, the schedule slipped and they realized no efficiencies. It seems ironic that some people once again are looking at centralization, particularly while Congress is debating the possibility of doing away with highly centralized agencies like the Departments of Commerce, Energy, HUD and others.

"Once again, people are talking about centralization. I told the Roles and Mission Commission, as strongly as I could, that we need to maintain separate acquisition communities for each of the services."

Also, for over 10 years, management industry experts have recognized that centralization has hurt excellence in American industry and in manufacturing. We don't want any part of a centralized agency. There is another hot topic in Washington, and it is called privatization. We in the Department of Defense and people in industry are talking past each other when we talk about privatization. When we talk

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about it from the government side, what we mean is turning work over to industry where there is a competitive base to do this work. What I find is when people in industry are saying privatization they mean turning the work over to the industry sole source. We have a miscommunication.

The source of this problem is proprietary data. I am sympathetic to industry's desire to protect their proprietary data. It seems to me there should be a reasonable statute of limitations in this regard. We have had some knock down, drag out fights over the release of proprietary data that is 30 years old, which doesn't seem to be in any one's best interest. Nevertheless, we need to get this straightened out. It is a cultural change. Other people are going through this cultural change. When your companies buy software from a software company for instance to put a management system into your company, you don't consider signing a contract with them that says, for the life of that system if you ever want to put any COTS [commercial off-the-shelf] or software attachment to that software they sold you, you are going to go back to this original guy. You don't do that.

They've overcome their difficulties with proprietary data. We need to do the same thing otherwise we are not going to get very far along with privatization.

Our future is about being linked and listening to each other as partners. The future is about staying lean, leaner processes, leaner production, leaner logistics, but highly efficient. Linked and listening approaches to defining requirements, developing systems, supporting those systems and fielding systems that will go unchallenged in the next century. The future is about leadership, it is about teams and about people. It is about leaders staying linked and listening to their people and the mission. Leaders, unfettered by bureaucracy but highly ethical, focused on a sense of public service and a need to preserve

public confidence. Leaders are about teams; teams engaging many minds and hands; teams empowered to make decisions; and people — men and women in blue and the civilian workforce that stand with them, and our industrial partners. People and leaders all imbued with the air power tradition of pride, teamwork and commitment to results. Monroe, thanks for asking me today, it is always a pleasure to see you. Thank you.

General Ronald W. Yates
Air Force Materiel Command

QUESTION AND ANSWER SESSION

GENERAL HATCH: *Thank you very much, Ron. The questions start with lean logistics and a number of them focus on what is important to industry and our contractors. How can they take advantage of this new perspective?*

GENERAL YATES: As I intimated, the same things apply to industry as apply to organic depots. It is shortening the flow times. This is going to require you to relook at how you are doing business in each process through the manufacturing or repair process — premium transportation and direct delivery. It is the same principle, but it has to be applied universally. That is where we are. We have these brilliant spikes of success. Where we have applied lean logistics shopwide in our depots, we have taken out 40 to 70 percent of the inventory. It is hard work and has to be done with a great deal of diligence. It has to be done universally. But, all those principles apply. I don't see any difference from industry as I do from organic depots.

GENERAL HATCH: *Thank you, Ron. We have a number of questions about depots. The BRAC [Base Realignment and Closure] process is coming up with an announcement next week. How would your command cope with the impact of potential closures and interservicing?*

GENERAL YATES: Clearly, I can't be open about this because you all know the legal restrictions that apply to BRAC, but I'd say there has been an effort to look at depots on an interservice basis. It is a

very difficult thing to do. There are no objective criteria, and without objective criteria, it always turns into a "my dad can beat your dad" type of argument.

There has been an effort to evaluate the potential for interservicing, and clearly a lot more can be done on interservicing than has been done. Regardless of what happens in BRAC and the interservicing process associated with what depots are staying open and which depots are closing, when it is through, we would still have a lot of interservicing that ought to be done; particularly between the Air Force and the Navy, but also there is a great deal that can be done with the Army.

We've not done a good job at that and have only scratched the surface. After the BRAC, I am looking forward to getting on with aggressive interservicing for whatever depots remain.

GENERAL HATCH: *Thank you, General Yates. What is your definition of "core work" in depot maintenance?*

GENERAL YATES: Well, core is really the work that has to be done in organic depots, to support the two MRCs. That is really a definition of core. There needs to be flexibility in what we define as core work. It is clearly a lot smaller than it was. As a matter of fact, it is less than half the size that we defined core a year and a half ago.

It can be looked at more flexibly than it has in the past. Nevertheless, it is not only a legal requirement, and we're not going to just fall back on that. We do need

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to maintain a core capability for those things that are important for our fighting forces because we have to guarantee that support. We get great support from industry. There is no question about that. But, we have to guarantee the support from the organic depots.

General Hatch: *Thank you, Ron. The technology reinvestment program has been in the news as of late. What impact has the technology reinvestment program had on Air Force research?*

General Yates: This is an ARPA [Advanced Research Projects Agency] program where they enter into cooperative agreements with industry, usually for technologies that have dual use application. We don't get any of this money. You can't give money from one government agency to the next. But, we have been working with industry to make sure the things they are proposing to ARPA do have valid military application and address our warfighters needs. So, we've been working with industry to make sure they put in more militarily attractive proposals.

To be frank, this hasn't changed our lives. In fact, if Congress decides to withdraw from this, there won't be major impact to us. We tried to make this program as healthy as we can, and it probably could be more healthy with time.

General Hatch: *Thank you, General Yates. With acquisition reform in place, why is the JPATS decision taking so long?*

General Yates: I guess we would ask the same thing. I won't give a specific reaction to that, but JPATS has been more labor than one would have thought. There are some good reasons for the delay, but it is scheduled for this summer, and I expect it to be on schedule.

General Hatch: *This question says Army Materiel Command has a simulation and training instrument command located here in Orlando. Does AFMC have any plans to create an organization*

responsible for integration of advanced simulator technology across the Air Force missions areas?

General Yates: We have an organization which is located at Phoenix -- it used to be at Williams Air Force Base -- that is responsible for integrating our technologies for simulators and training. It has been very active and very productive.

They are the organization that produce the F-16 simulators we put in each of our squadrons for the Guard and Reserve. They've produced some very significant things. They are the heart of our current efforts to look at pilot disorientation or pilot situation awareness. We have considered putting those people down here in Orlando. During the last base closure process, we looked at combining those organizations. It is also going to be reconsidered in this current base closure.

General Hatch: *Thank you, General Yates. What is Air Force Materiel Command doing about high cycle fatigue in engines?*

General Yates: We are worrying a lot about high cycle fatigue in engines. Today, we are about at the point with high cycle fatigue where we were about 1980 with the compressor stalls and unstable inlet conditions in the F-100 series of engines. We don't fully understand it and we don't have the required technology in terms of test assets and instrumentation. We have some ideas, but I don't think we have a full deck of design tools. This is not a problem which is confined to one engine manufacturer. Both have the problem. It is not a problem which is confined to military engines. The new commercial engines are having the same problem. This is a problem of our time.

We are going to mount an offensive to solve this problem just as we did to solve our compressor stall problem on the F-100 engines. We have interim fixes to all of the problems that have occurred to date on our engines. But they are demanding in

terms of dollars and in terms of people. So this is not the long term fix to this thing. We have got to get ourselves out of this mode. This is not something I suspect will be solved quickly.

If you pin me down, I'd say we are looking at five years to solve this problem. We may have some significant technical breakthroughs between now and five years, but it is that kind of problem.

Our near term plan is to make investments in the right test facilities. We have S&T and R&D investments toward instrumentation to be able to get to the root of the problem and understand where the problem has occurred. Then we can design around it. This is a large problem we are just starting on.

GENERAL HATCH: *Thank you, Ron. A final question asks, "What is Air Force Materiel Command doing to forge closer ties with industry?"*

GENERAL YATES: We have a number of initiatives. Earlier, I mentioned our IPTs [Integrated Product Team]. Two years ago I might have said it might be a good idea to have industry on our IPTs. Now, I almost demand having industry on our IPTs. That brings us closer together.

We meet with the CEOs twice a year at a pretty rigorous meeting. The major purpose of the meeting is to ask them what we need to go work on, and we go work on those things, and we report back to them. I report back to them two times between each meeting. They are not short action items. They are not something you get up and leave the meeting, go write a letter, mail it to somebody and write them back and say we did this.

I'll give you examples. The two major things that came out of the CEO meetings were to revise the RFP [request for proposal] process and we have gone that. We went through that in great detail with the CEOs. It took us a couple of years to get that done. The next thing they asked us to work on is what we call clear accountabil-

ity and design, which I alluded to in my prepared remarks. This has to do with the process when the government takes over specifications. They've asked us for a number of legislative reforms that we have pursued. I gave them a box score the last time we met, and it has been about 30 percent, which, considering the difficulty of getting legislation enacted, is pretty remarkable. We are doing what I know to do to strengthen our ties. Most of all, we realize we can't survive without industry's strong support. So we are going after that support. We've done a lot. But I'm not about to think there is not more to do.

GENERAL HATCH: *Thank you very much for being with us today General Yates. We appreciate everything you do. Our audience should mark on their calendars we have a symposium in Dayton, Ohio, on May 2-3, that we co-sponsor with Air Force Materiel Command. We will be delving into acquisition and logistics issues in some detail. You are certainly invited to participate.*

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USAFE - FORWARD DEPLOYED AND READY

My plan today is to give you a position report on USAFE — an update from where General Bob Oaks reported in to you last year.

The abridged version is we had another big year — continued drawdown, force restructuring, and contingencies — lots of challenges, lots of work, and despite the pace — lots of enthusiasm from the troops.

If you measure how the troops view life through the prism of what I call the “trample index” — if you hold up an opportunity for a TDY, how likely are you to get trampled by troops wanting to go on the trip — you’ll be pleased to know it’s still quite high. They like what they do and they’ll still beat you down to get on the road again. We have a group of dedicated, committed airmen.

Let me begin by recapping the Command’s route of flight over the past couple of years. Prior to operation Desert Storm, USAFE essentially had only one flying unit with a mobility commitment. Since then, we have transitioned from a fight-in-place fighter force postured for a large-scale European conflict to a mobile and deployable mixed force that can simultaneously operate in multiple locations.

This transition has dramatically affected, and been affected, by our basing, personnel levels, and force structure. To begin with, we have reduced our main operating bases (MOBs) by over 60 percent, from 16 MOBs to only six — only six MOBS — hard to believe.

We now center our operations around:

- RAFs Mildenhall and Lakenheath under 3rd Air Force in the United Kingdom,
- Ramstein and Spangdahlem Air Bases in Germany under 17th AF, and
- Aviano[AB, Italy] and Incirlik [AB, Turkey] in the Southern Region under 16th AF.

You will know that many of those grand old names associated with the United States Air Forces in Europe are gone: Zweibruecken, Hahn, Bentwaters, Woodbridge, Torrejon, Zaragoza, San Vito and Ankara Air Station to name just a few.

Just in the past year, we have closed Bitburg AB in Germany, Soesterberg AB in the Netherlands, and RAF Upper Heyford in the UK. RAF Chicksands and Alconbury will close this year, and we’ll inactivate Sembach AB and make it an annex of Ramstein.

We have transformed Ramstein from an F-16 fighter wing to an airlift wing. The F-16s moved to Aviano, and we finally completed that move out of Torrejon [AB, Spain]. We brought the C-130s and C-9s down from Rhein Main AB, Germany.

“We have reduced our main operating bases by over 60 percent, from 16 to only 6.”

In fact, Ramstein now has become the hub for European airlift. Rhein Main will be downsized — not closed — to a contingency airlift base. We will have a contract to open it in a hurry if we need to do that.



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When the drawdown is complete, our total Air Force personnel strength will have dropped from a high of over 83,000 in FY91 to just 34,000 by the end of this fiscal year. That's a bluesuiter reduction in Europe of 60 percent.

"Fighter strength has dropped by 66 percent, over 400 aircraft, from about nine fighter wings with 636 fighter aircraft, down to just nine squadrons and 168 aircraft."

Obviously, our force structure in Europe has also changed — from predominately a single-type-of-fighter-on-a-single-base force to a more composite organization. Fighter strength has dropped by 66 percent, over 400 aircraft, from about nine fighter wings with 636 fighter aircraft, down to just nine squadrons and 168 aircraft.

When I left 12th Air Force, General Loh told me I would be going to a much smaller command, but the activity level is much different.

On the plus side, the command has added C-130s, KC-135s, C-9 aeromedical evac birds and various operational support aircraft to our own books. In many ways we are now more of a full-service theater air force, on a much smaller scale.

Interestingly, though we've grown smaller in the overall numbers game, we've gained in capabilities because we have modernized our air assets and have moved into the composite wing business.

The roles have changed though. Since the end of the cold war, USAFE's role in Europe has expanded from traditional tasks associated with war fighting to a mission that includes peace promoting, peace making, peacekeeping, and peace enforcing, if we know what all those things mean. However you define them, they keep us busy.

To respond to this broader range of missions, we've stayed on track with the visions of Generals Mike Dugan and Bob Oaks. That track is to be a forward based force concentrating on "core capabilities" to provide credible airpower to the theater unified commander and NATO, in this case to General Joulwan [General George A. Joulwan].

These core capabilities fall into the general categories:

- Air superiority
- Ground attack
- Nuclear operations
- Aerial refueling
- Theater airlift
- Command and control

Fundamentally, we retained our core capabilities by creating three composite wings to maintain combat power within a much leaner basing structure. So, now you find:

The 52nd Fighter Wing at Spangdahlem AB [Germany] with F-15Cs, F-16s (C and D models), A-10s, OA-10s and an Air Control Squadron.

At the 48th Fighter Wing at RAF Lakenheath there are F-15Cs and F-15Es. We split the Bitburg F-15Cs out and put them at a couple of different bases.

The 86th Airlift Wing at Ramstein AB has C-130s, C-9s, C-20s, C-21s and a T-43. The 86th is unique with its combination of OSA [Operational Support Aircraft], aeromedical evacuation and airlift assets. This outfit has been busy with a full operational commitment while moving the C-9s and C-130s into Ramstein. They've been key players in the PROVIDE PROMISE airlift, the medical evacuations of trauma victims after the Sarajevo market bombing, and countless missions supporting Europe's newly independent nations in the East. Our young OSA troops are flying into places they never dreamed of visiting.

Overall, we've upgraded and modified our fighter force. We replaced F-111s with

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F-15Es. We upgraded our F-16s to block 40's and 50's, providing them with LANTIRN [Low-altitude Navigation and Targeting Infrared for Night] and HARM [High-Speed Antiradiation Missile] targeting capability.

Our A-10s are being modified, as we speak, for night vision goggles. We have truly opened up the night and increased the precision guided munitions capability that is essential to support the theater unified commander.

"Though we've grown smaller, we've gained in capabilities because we have modernized our air assets and have moved into the composite wing business".

In fact, we now have more precision combat firepower in USAFE with a smaller, modernized, composite structure than we had with much larger numbers in the past as a result of modernization and the composite wing structure.

While all of these changes have been going on, we have been busier than ever. Since operation Desert Storm, a series of continual — and often simultaneous — peacekeeping and humanitarian operations have kept USAFE fully employed, not to mention deployed.

Let me talk about how we got to this point, and many of these activities are ongoing.

In 1991, we began our multinational involvement with operation PROVIDE COMFORT — which started out as a 10-day humanitarian air drop to Kurdish refugees and evolved into the long-term enforcement of a no-fly zone over northern Iraq — essentially the aerial occupation of terrain. We've now been there longer than the Korean War, and I don't see any prospect of getting out of there soon.

In 1992, along with our allies, we be-

gan what has become the longest continuous airlift operation in history with the delivery of humanitarian supplies to Sarajevo. In 1993, this operation — PROVIDE PROMISE — expanded to include air drop missions into enclaves throughout Bosnia-Herzegovina.

Also in 1993, and again with our allies, we began operation DENY FLIGHT, patrolling the Bosnia no-fly zone.

DENY FLIGHT gives a good example of the value of forward-based, "core capabilities." In April of 1993, the men and women of the 603rd Air Control Squadron (ACS) in Germany packed up, and deployed on short notice about 70 five-ton truck and trailer tows across more than 1200 miles of European highways — over the Easter weekend — to Aviano to support DENY FLIGHT. In a matter of hours they were up and running, providing the key command and control links for the operation.

Later in 1993, we added A-10s to operation DENY FLIGHT for close air support of UN ground forces. Last year, while fully engaged in these operations, people and assets from USAFE supported the Air Mobility Command in providing humanitarian relief — almost literally overnight — to Rwanda, in operation SUPPORT HOPE.

"While all of these changes have been going on, we have been busier than ever. A series of continual — and often simultaneous — peacekeeping and humanitarian operations have kept USAFE fully employed, not to mention deployed."

Here again, forward basing helps with our responsiveness as an air force, as we provide the people to help establish the ini-

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tial support structure, both in theater at European bases and at the point of contact. In the case of Rwanda, we had security police, air traffic controllers, postal specialists, chaplains, communicators and many more, deployed throughout Europe at places like Moron [AB, Spain] where you can quickly stand up a base and some deployed 6,000 kilometers into central Africa.

"These continuous commitments of USAFE forces to contingency missions in the midst of drawdown, realignments and closures have been challenging for our people . . . the 48th Fighter Wing at RAF Lakenheath has not been in one location as an entire unit since their conversion to F-15Es in 1993."

These continuous commitments of USAFE forces to contingency missions in the midst of drawdown, realignments and closures have been challenging for our people — a lot of time gone, a lot of family separation, and a lot of turmoil. For instance, the 48th Fighter Wing at RAF Lakenheath has not been in one location as an entire unit since their conversion to F-15Es in 1993.

Until recently, USAFE's only A-10 squadron from the 52d Fighter Wing at Spangdahlem AB, Germany, had been deployed full-time to operation DENY FLIGHT since their initial arrival in 1993.

While the pace has been fast, 1994 was probably the high water mark in terms of pressure on USAFE's people — the cavalry is on the way.

To be clear we've been getting help all along. ACC [Air Combat Command] has been with us from the start with F-4G

Wild Weasels, AWACS, ABCCC, U-2s and RC-135s. AMC has had their tanker task force refuelers in theater for years helping us out, and the Guard and Reserve were important players — I'll talk about them more in a moment.

In fact, sometimes the worldwide nature of the support catches you off guard. I went to Incirlik in December to do a television Christmas "spot" in the tent city (which has been there and occupied for over four years) and was surrounded in the last scene by civil engineers — a PRIME BEEF team that keeps the tent city operating — from the 18th Wing at Kadena [Air Base, Japan]. They spent Thanksgiving and Christmas in Turkey. This gives some sense of how we rely on other folks to do business.

The Air Force Reserve and Air National Guard [Air Reserve Component (ARC)], always strong partners in Europe, recently kept us alive with their "Christmas help," and I say that with great respect.

Thanks to them, this Christmas the 52nd Wing at Spandahlem was home for the holidays for the first time since the Gulf War.

Guardsmen and reservists have gone from deploying to Europe for training — the old CHECKERED FLAG events — to moving directly into shooting contingencies.

In August 1994, for instance, when Serb forces attempted to remove confiscated heavy equipment from a UN holding facility in the Sarajevo exclusion zone, the ARC team flew the mission to halt the breakout. The airstrike was flown by a Guard pilot flying a Reserve A-10, and he was refueled enroute by a Reserve crew flying a Guard KC-135 tanker. We mix and match them very effectively.

The readiness of our Guard and Reserve units is legend in Europe and should be a source of pride to us all — they are highly respected by the theater Unified

CINC [Commander-in-Chief].

There is a great team effort underway to come to grips with the mission load in Europe. The various staffs just wrapped up a contingency support and planning session at Langley [AFB, Va.] — the picture for 1995/96 is a thing of beauty — an array of USAFE, ACC, PACAF, ANG, and AFRES deployments that truly demonstrates a classic case of teamwork and sharing the workload.

For us in Europe, this isn't just a quality of life benefit — getting people home to their families — though that's important enough. It also has a direct readiness payoff. This assistance from Reserve, Guard and active Air Force partners has freed up USAFE pilots for critical training, and our aircraft for essential maintenance.

Let me change gears now. I've mentioned several times the coalition, multinational aspect of our contingency operations.

If there is to be a consistent theme as we engage the new world order; multinationality may well be it. From the European perspective, I can foresee very few, if any, instances in the future where the United States will be "going in alone." The trend of the future will be multinational activities. Airmen, by the way, are very good at that. USAFE has always been part of a multinational force — that's what NATO is all about.

Among other things, this multinationality approach reduces the workload for U.S. forces. As hard as our forces are working, there's a bigger game afoot.

Some specifics:

As of February 21, 1995, the USAF (including Guard and Reserve) had flown 4,292 airlift sorties into Sarajevo — only 33 percent of the 12,930 total sorties.

From a slightly different perspective, the allies have airdropped over 27,000 metric tons of food and medicine to en-

claves in Bosnia. In this case the Air Force has delivered about 23,000 tons, or 83 percent of that total, principally because our airdrop systems are more robust than those of our allies.

The U.S. currently contributes about 70 of the more than 160 NATO tactical aircraft involved in the no-fly-zone enforcement operation over Bosnia-Herzegovina. The allies have flown a total of 52,542 operational sorties in DENY FLIGHT as of February 15, 1995. The Air Force has flown 17,055 of those, again about one third.

The mission totals in all these events are big, and the operations are complex. That they have been executed virtually flawlessly is a testimony to how the past 40 years of harmonizing and streamlining NATO operating procedures has paid off. In addition, it is a testimony to good leadership — people like "Bear" Chambers [Lt. Gen. James E. Chambers] who is now retired and General Joe Ashy, who will follow me to the podium here today, and Mike Ryan [Lt. Gen. Michael E. Ryan]. They make sure these operations go well.

Let me give you a textbook example of the complexity and professionalism involved in this multinational business — the NATO air strike against Udbina airfield on November 21, 1994.

There have been many firsts for NATO in the past few years, one of the more important was the first large scale, multinational combat air strike. On November 19, after confirmed air attacks in Bosnia by fighters operating from Udbina airfield in the Krajina-Serb region of Croatia, the UN Security Council voted to allow NATO airstrikes on the base.

"I can foresee very few, if any, instances in the future where the United States will be 'going in alone'."

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NATO air planners at the Fifth Allied Tactical Air Force's Combined Air Operations Center (CAOC), had been working contingency plans for Udbina for some time. When orders were handed down the NATO chain of command to conduct the strike, the 5ATAF CAOC planners quickly presented an updated plan to Mike Ryan, NATO's Southern Region air boss.

"Business is booming in USAFE, and there is probably no better example of teamwork than the support we, the U.S. Air Force, collectively provide to the theater Commander-in-Chief."

As commander, Allied Air Forces Southern Europe, Mike had overall responsibility for the airstrike. He approved the plan and ran the operation from the CAOC in Vicenza, Italy. After a one-day delay for weather, the mission was on. This was a multi-service, multi-national, effort designed to hit the targets, protect the force and document the operation.

The 55 aircraft air package was made up of 39 in the strike package including: the F-15E, F-16, F-18, EF-111, Jaguars and Mirages. There were 16 aircraft in the support package including: NATO AWACS, EC-130 ABCCC, EP-3, P-3, RC-135, KC-135, and L-1011 tankers, search and rescue support with the MH-53, HC-130, and A-10s. All-in-all, a complex array of airplanes from many nations taking on a mission they had never had the opportunity to practice.

Added to this, the overall objective as defined by UN political leadership was not to destroy Udbina or aircraft on the ground, but to deny the use of Udbina for a period of time as a signal of resolve.

The concern for collateral damage and unnecessary loss of life was high on the UN's priority list, but it made it more dif-

ficult to put the mission together. So it was decided not to attack aircraft in the open or airfield structures other than those associated with defense of the airfield. The mission became one of rendering the runway unusable and cutting the taxiways.

The complexity of this mission was as high as any I've seen: timely suppression of the surveillance and requisition radars, the SA-6 surface-to-air missiles and anti-aircraft artillery (AAA); precision weapons deliveries and post strike reconnaissance. It was a piece of cake, right? Not really.

Here is a quick mission recap. The defense suppression phase began with stand-off electronic jamming and a pre-emptive high speed antiradiation missile (HARM) launch against a known SA-6 site 1.5 kilometers east of the runway.

One minute after HARM impact two aircraft hit the same SA-6 site using GBU-12 500-pound laser guided bombs. The final suppression element was a flight of two F-16's that laid down a total of 12 500-pound bombs on the "giraffe" early warning radar at the airfield.

Battle damage assessment (BDA) photos showed bomb impacts within the SA-6 SAM site, the SA-6 launcher in flames and various support vehicles and equipment destroyed.

The next phase consisted of two four-ship flights dropping CBU's [Cluster Bomb Unit] on six AAA positions around the runway.

BDA photos showed the CBU impacts totally covering the group of AAA pits. The runway busters were four F-15E's using GBU-10 laser guided bombs. They put all ten bombs precisely on target; achieving five "textbook" runway cuts. The taxiways were then cut by multiple aircraft using a variety of munitions.

Of course, in this environment you need to see results, so as soon as the dust settled from the last bombs on the taxiways, the first TAC RECCE flew overhead. The

mission commander for all this, by the way,
was not an American.

There have been predictable debates
about the political effectiveness of the
airstrike, but by any measure of military
merit this was a well planned, well executed
operation that achieved it's objectives.

The credit for this success goes to all
those things we have been doing through
the years that help us operate together. The
daily interaction of forward deployed
forces along with multinational participation
in RED FLAGS, GREEN FLAGS and
NATO's Tactical Leadership Program —
these have all created the common doctrine,
compatible tactics, mutual understanding,
and most important, a shared trust between
airmen that means success in combat.

Well, that's the position report on
USAFE. It is a busy place. Business is
booming in USAFE, and there is probably
no better example of teamwork than the
support we, the U.S. Air Force, collectively
provide to the theater Commander-in-
Chief.

As our Chief, General Fogleman, has
described it, this is truly a team within a
team. Thank you very much for your at-
tention and support.

I will be happy to address your ques-
tions.

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QUESTION AND ANSWER SESSION

GENERAL HATCH: *Thank you, Jim. During your remarks, you said 16 USAFE bases were now down to six and nine wings down to nine squadrons, but you have major operations you continue to support. Can you keep doing what you are doing and maintain that pace, both operationally and with support?*

GENERAL JAMERSON: I can easily say we can not continue the pace with the force that we have. You simply can't operate with that size force. As I mentioned, 1994 was a high-water mark. We received some publicity when the Secretary of Defense came through Spangdahlem [AB, Germany], and we talked with him about wear and tear. We already had a fix working — through co-operation with all the different commands in the Air Force which have pilots and troops who could afford to come to Europe.

No, we can't do it by ourselves. We must have some help, and that is what we're getting. We're getting lots of help from pilots in the Guard and Reserve. But they are not the only folks helping. We had Hawaii Air National Guard F-15s down at Incirlik [AB, Turkey] up until about a month ago. We have people from all over the world coming to Europe, and it is going to take that kind of effort, otherwise, we'll wear out our people. We had people that were away from home up to the high 100s, and some in the 200 plus days. That separation is in a European environment where you don't have the off-

base capabilities to do other things and to take care of children and enjoy other entertainment. That's real tough. So, we must have some help, but we can do it when we have that help.

GENERAL HATCH: *Thank you, Jim. Here is a good question for a combat commander in the field. What combat mission area do you feel needs an injection of investment dollars, and if you had a choice and there were extra dollars, where would you put them?*

GENERAL JAMERSON: Well, because of what I have, I'd support what the Chief says. We want to get the force we have up to speed. First, we would like to get the engines fixed. We were just talking to General Yates a little while ago. We operate on a the thin line. We'd like to have good support of the force in place.

For us, it's not been a question of staying ready to go, it's been more that we've just run out of time to do things. It is more making sure that what we've got is operational and ready to go. We have full up spares kits so we don't have to worry about things like that.

We are also going back to core capabilities in the theater. We are trying to regain some of the things we used to do for a living, but we forgot for reasons that are probably beyond us. We have F-16s out of Davis-Monthan [AFB, Az.] going through a FAC training program — forward air controller training — so we can get back in that game. As airmen, we want to bring a full deck of cards to the table,

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the things we ought to be able to do.

GENERAL HATCH: *Thank you, Jim. This next question is about the C-17. In view of the significant tactical airlift capabilities of the C-17, what work is USAFE doing with Air Mobility Command to plan for the employment of this capability?*

GENERAL JAMERSON: With the declaration of operational capability in the first squadron, we now have them coming through the theater. We don't see them in large numbers, but they are already on the ramp. You'll see them at Ramstein [AB, Germany], and every now and then over at Mildenhall [AB, UK]. The capability to use the airplane is already in place. The planning has been done by the AMC folks, and we support them as necessary. They've already put that ground work down to handle the airplane. We have also pooled our information as we work our way towards the decisions on C-17s and other airplanes. We are trying to get as clear a picture as we can on the value of any airplane — from our perspective as a user.

We look at places where we may have to go and figure out what is the right airplane to do that. For example, we look at places like Goma [Zaire]. In the processes, we are moving toward decisions on numbers of aircraft that will help.

GENERAL HATCH: *Thank you, Jim. Concerning General Yates' remarks on two-level maintenance, how is two-level maintenance working out to support you in the European area?*

GENERAL JAMERSON: I would tend to say that two-level maintenance is working better than a lot of people thought it might. We are not having big problems. There is pressure to move on to the next logical steps in two-level maintenance, and we must be a little more careful in Europe because it is the transportation piece that really affects us—the movement of parts, back and forth.

But two-level maintenance is coming

on board with us, and it hasn't caused any difficulties. We support the effort.

GENERAL HATCH: *As a final question, there has been a lot of talk about expanding NATO. What kind of contacts do you have with the air forces of Eastern Europe and the former Soviet Republics and what lies ahead?*

GENERAL JAMERSON: I will try not to talk as long as one might about that. It is a growth industry for us. I have a two-hatted job — one is a NATO job and one is a USAFE job. We are spending an amazing amount of time in both small and large numbers travelling back and forth to these countries in the East. It is an amazing and a heartening thing to see. Some more aggressively than others, ask "when are you going to let us into NATO." That is a political question, and not a question for a guy like me. But our task is to help them harmonize their military with NATO so we can get standardization established, which is one of the goals of the Partnership for Peace program.

We help their military get to the point where it can work in the NATO environment, and the politicians will make the decisions about who gets to join and when. It is a busy time and it is busy at every fathomable level, from chaplain programs to public affairs to fighters to air defense — anything we do for a living.

As a final point, the biggest problem we have on the Western side is coordination. Every country is arranging bilateral contacts. We are doing NATO contacts. I think any contact is a good contact in that world. Eventually, we have to get a little more efficient in how we do that because we've lots of different people flowing through those countries and they are getting 47 answers to the same question. It is probably a little confusing to them on occasion.

GENERAL HATCH: *Thank you very much, Jim, and thank you for being with us today.*

General Joseph W. Ashy
U.S. Space Command

SPACE FORCES FOR THE 21ST CENTURY

There has been a lot of talk about space support to the warfighter, and we appreciate Secretary Widnall's leadership and initiatives in this area of vital concern. She recently outlined three goals for our military space efforts:

First, make space support to the warfighter routine.

Second, improve military cooperation with civilian space efforts.

Third, make space launch routine and affordable.

This evening I would like to focus on the Secretary's first goal concerning space support to the warfighter.

Like many of you here today, I've been on the receiving end of this support. In the Mediterranean theater of operations, I knew its importance and what it did for me. I knew I couldn't get the job done without it. But I didn't fully understand what was available, how it got to me, and how to get it if I didn't have it.

As important as space is to modern warfare, it is our job in Air Force Space Command and the United States Space Command to effectively communicate the "where from's" and "how to's" of space support.

Space support to the warfighter will never be routine until it is fully understood. One of our top priorities is to make it understandable to the warfighter so that it can, therefore, be routine and be effective — in consonance with the Secretary's goals. By the way, the best way to support warfighters is to be a warfighter with a

warfighting mindset. That is what we are striving for in Air Force Space Command.

We need to focus on three areas: First, we need to establish at the outset what it is we are really talking about when we say space support for the warfighter.

Second, we need to examine where we are today in our efforts.

Finally, we need to look at the way ahead to improve our efforts.

To set the stage, let me briefly summarize the four space mission areas from a space warfighter's perspective. These are our assigned mission areas:

- Space Forces Support
- Space Control
- Force Application
- Force Enhancement





SPACE FORCES SUPPORT



TITAN IV



ATLAS IIA



TITAN II



DELTA II

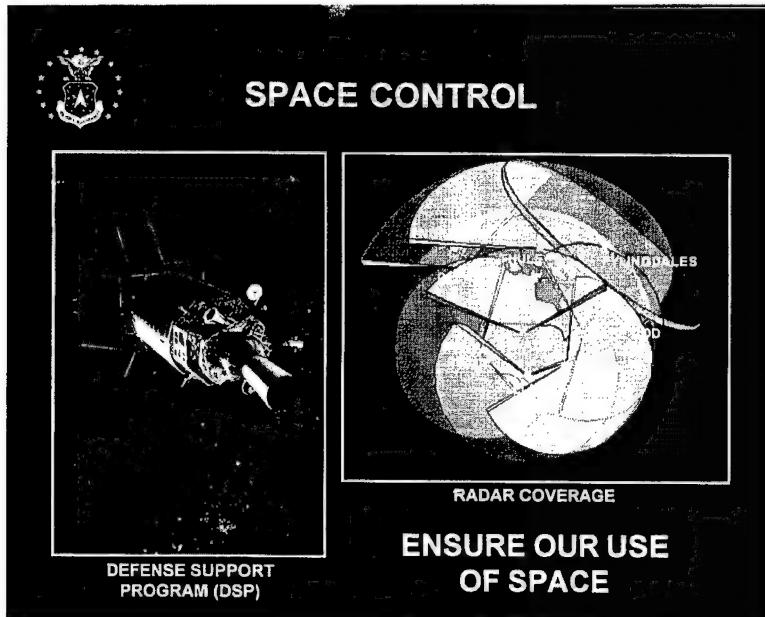


PEGASUS

SPACELIFT

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The first mission area is **SPACE FORCES SUPPORT**. This sounds a lot like space support to the warfighters, but it is technically not. The emphasis goes on the words space forces. This is what we do specifically to support the space portion of our force structure. Its two basic elements are space lift, which is getting things on orbit, in other words, launch. Secondly, satellite operations, which is the constant care and feeding of satellites once they are in orbit.



The second mission area is **SPACE CONTROL**, the objective here is to ensure our access to and use of space and to deny the enemy the benefit of space when necessary. We pay a lot of attention to this in our deliberative planning processes with our components and the unified CINCs.

It includes:

Space surveillance — so we know what is going on up there, we have to track every object up there and there are about 7,800 up there.

Protection — of our own space capabilities. MILSTAR, for example, is hardened against attack.

Negation — the ability to destroy or disrupt segments of the enemy's space ca-

pabilities.

The third mission area is **FORCE APPLICATION**. In the case of Air Force Space Command, this is the land based portion of the nuclear deterrent TRIAD, specifically our Peacekeeper and Minuteman ICBMs that continue to keep the peace as a credible deterrent force. These systems travel suborbital through space in support of CINCSTRAT's mission. Recently, the President approved the Nuclear Posture Review. Although it diminished the quantity of ICBMs, it still keeps this quality force for some time to come. I want to say how proud I am of our missile units and people. They operate at incredibly high alert rates and their dedication and professionalism, now as in the past, are remarkable. I salute them and I know that you join me in that gratitude.

The fourth mission area and the one that we really are concerned about today is **FORCE ENHANCEMENT**. This is where support to the warfighter comes together. We support the warfighters in five areas. The first is navigation. I am sure you are all aware of the revolutionary impact of having accurate latitude, longitude, altitude and the time on any battlefield anywhere in the world, 24 hours a day.

Communications are the lifeblood of the battlefield commander. Like money, there is never quite enough of it. That is why we have to be smart on how we allocate satellite communications to support our highest priorities. Every commander must know how to request and use satellite communications and we are working on this hard.

Weather is another important product of Space support to the warfighter. Theater commanders should not only have the direct links to receive weather data, they also need to understand when that weather data will be available, and how old it will be. These are systems we employ today. These are fundamental aspects of battlespace planning.

"We are working hard to fuse the intelligence data from photographic and multi-spectral imagery sources directly to the battlefield."

I don't need to tell you how important intelligence is to the warfighter — especially in planning and in preparation of the battlefield. We are working hard to fuse the intelligence data from photographic and multi-spectral imagery sources directly to the battlefield. Here again the commander needs to understand how to plug in.

One final area of support to the warfighters is the space borne warning for theater missile defense. Although at Space Command we provide only the space-based portion of this mission, I think we all need to be clear on the fundamental elements of this mission in the theater of operations where we have Americans and our allies at risk today in various parts of the world. Theater missile defense is a specific mission designed to counter missiles used within a theater, obviously. A comprehensive theater missile defense must counter two types of threats: ballistic missiles and cruise missiles. Each type presents a very different defensive challenge: Ballistic missiles are high, fast and unpowered following booster burn out. Cruise missiles, on the other hand, are low, slower and remain powered throughout the flight. Detection and effective engagement of both are formidable tasks that we are collectively working hard on.

We also need to understand who has the mission. Defending against theater ballistic missiles is a theater CINC responsibility ultimately, resulting from the authority to plan and execute. Theater missile defense is normally a part of the air defense portion of every theater air defense capability.

However, the theater command can

decide how the organization will flow. Theater ballistic missile hardware is proliferating, such as in Southwest Asia, Northern Africa and North Korea. So we have Americans and our allies at various theaters threatened by these weapons and many nations are developing their own missile capabilities along with the warheads capable of mass destruction.

All of these elements, including programs designed to address current shortfalls, are essentially aimed at buying the theater CINC greater theater missile defense battle space. The objective is to greatly expand our current small area, point defense zones. By engaging missiles as far out as possible, we minimize collateral damage and create a better, increased coverage, defensive umbrella over our theater forces.

Let me now suggest that in order to adequately address the problem of theater missile defense, an effective system must employ the following elements. While these elements are explained as my version, these are stated in approved Joint Doctrine as active defense, passive defense, attack operations, and C⁴I.

INTELLIGENCE PREPARATION

BATTLEFIELD MAP

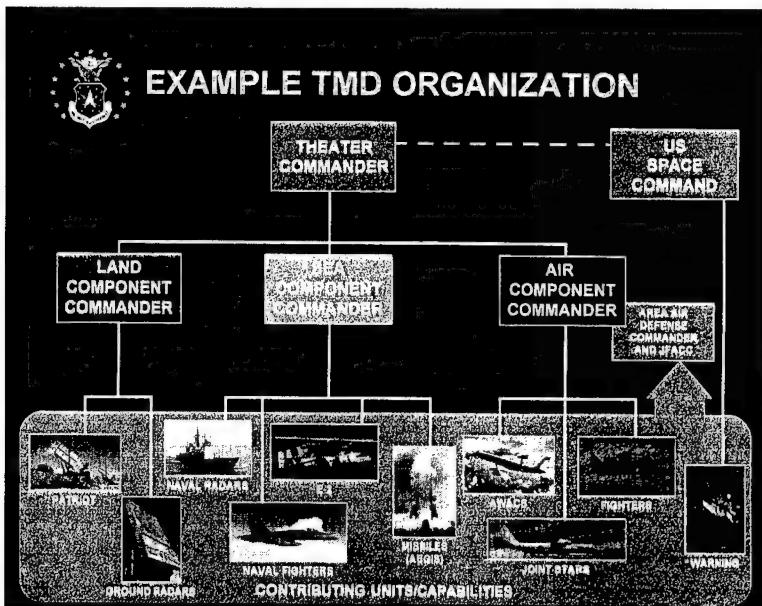
- KNOW THE BATTLEFIELD
- PREDICT WHERE THE ENEMY IS
- OBJECTIVE: KILL BEFORE LAUNCH

RECONNAISSANCE TEAM

The slide has a dark background. At the top center is the title 'INTELLIGENCE PREPARATION' in a bold, sans-serif font. To the left of the title is a heraldic crest. Below the title is a map of a coastal region with several numbered locations (1 through 6) marked with symbols like triangles and squares. The map includes labels for 'HARBOR SECURITY' and 'DEFENSIVE ZONE'. Below the map is the label 'BATTLEFIELD MAP'. To the right of the map is a bulleted list of three items: 'KNOW THE BATTLEFIELD', 'PREDICT WHERE THE ENEMY IS', and 'OBJECTIVE: KILL BEFORE LAUNCH'. At the bottom right is a black and white photograph of two soldiers in military gear, one holding a rifle, standing in a field. Below the photograph is the label 'RECONNAISSANCE TEAM'.

AIR POWER: MEETING THE CHALLENGES OF THE 21ST CENTURY

First, intelligence preparation. We need to know the enemy, his predisposition to use or not use theater missiles and weapons of mass destruction, and what kind of weapons they have. We need to know and “prepare” the battlefield including how and where an enemy can act. We can then focus on how and where the enemy can be countered, preferably destroying enemy missiles before they launch or during the launch or boost phase when they are over enemy territory.



Our success depends on a system of effective sensors. Sensors are critical for detecting, tracking and cueing our defense. Today we have sensor capabilities operating in all four media: land, sea, air and space. The better we are at this, the better we can buy battle space and engage sooner and more often along the trajectory of missile flight.

Effective weapons systems are the third element. Our objective, as stated earlier, is to be able to engage early and throughout the missile flight. The bottom line is to buy battlespace and be more effective than just being able to engage only in the terminal phase. We are actually developing and procuring the core systems of ERINT, PAC III, the THAAD, and AEGIS lower tier. There are other programs coming along and in development, such as AEGIS upper and boost phase intercept.

To integrate all the sensors and shooters into a responsive theater missile defense system requires an organization dedicated to the task. In my example here, the theater CINC's forces are organized into three functional areas by land, sea and air. This is consistent with the CINC's authority to organize and assign tasks as he deems appropriate and the theater missile defense mission could be assigned to any of those three components there. But in this illustration, it's delegated to the air commander, with important contributions being made from all of the three components.

The communications element represents the nervous system for the theater missile defense system. It gets the message from the sensors to the shooters quickly, efficiently and error free and evaluates direction and execution. Something, by the way, we can do a lot better now through improvements to software on how we provide space-borne warning to theater commanders. Over the last four years we've made these improvements. This is a very time-sensitive mission. It is important to identify effective, secure data and

force communication requirements in advance to ensure that all information is immediately sent between warning, offensive, and defensive systems.

"As for all warfighting missions, the integration of space products has to be seamless and routine."

Finally, execution relies on predetermined rules of engagement and procedures that define how to respond to the specific theater threats. Exercises are needed to train forces and test systems to ensure that personnel, sensors, equipment, procedures and responses are adequate, timely and appropriate. This is really important because reaction time against ballistic missiles in a theater of operation is greatly reduced.

Theater missile defense is a good example of the theater warfighting mission supported in part by space systems. As for all warfighting missions, the integration of space products has to be seamless and routine.

Having summarized what we mean when we say space support to the warfighter with some examples, let me tell you where I think we are today on this subject.

We have established a space warfare center located at Falcon Air Force Base, Colorado, to join ranks with other centers around the nation and provide a center of excellence specifically devoted to the integration and adaption of space to warfighting. Its main purpose is to support warfighters. The Space Warfare Center has two operating locations: one in the National Test Facility at Falcon, and the other one at Nellis Air Force Base [Nev.]. The center supports air component requirements, but it also has direct links to the other services and agencies. Very important among its various missions is its responsibility to integrate our national sys-

tems into Air Force combat capability.

One of the Space Warfare Center's primary missions is space education and training. It offers three courses. The most basic is the Space Missile Applications Basic Course. This is for our warfighters and their orientation to space. It provides the fundamental space applications information. It is a short, three-day orientation course that can be tailored to specific audiences and topics.

The next course, in order of complexity, is our Space Applications Advanced Course, lasting three weeks and providing more in-depth information on space capabilities. Our final course is the Space Tactics Course, a comprehensive, three-month course similar to the courses taught at Nellis Air Force Base. It provides graduates the necessary background to evaluate operational plans and policies and successfully integrate space into theater warfighting applications.



SPACE WARFARE CENTER



- FALCON AFB
- MISSIONS
- SPACE WARFIGHTING APPLICATIONS
- TEACHING AND TRAINING
- TACTICS AND PROCEDURES DEVELOPMENT
- MODELING AND GAMING
- TESTING
- SPACE SUPPORT TEAMS

AIR POWER: MEETING THE CHALLENGES OF THE 21ST CENTURY

The Center is also involved in modeling, gaming and testing of proposed space applications. Finally, the Space Warfare Center maintains readiness to deploy five-person space support teams to the theater air component commanders to help them with space expertise for the planning and execution of theater operations. These people are dedicated to the air commanders, but we also have them for the other components and joint teams.

SPACE SUPPORT TEAMS (SST)

- SUPPORTS JOINT OPERATIONS --- ARMY, NAVY, AND AIR FORCE PERSONNEL
- 5 PERSONNEL PER THEATER OF OPERATIONS
- DEPLOYS TO THEATER OF OPERATIONS UNDER AIR COMPONENT COMMANDER
- ENSURES SPACE SUPPORT TO ALL ECHELONS - PLANNERS TO SHOOTERS

Unified commands are also incorporated into space in their planning and operations. To help them, U.S. Space Command provides Joint Space Support Teams, or JSSTs, which give the joint staffs the same degree of space warfighting support our service components have come to expect. This is why we have standardized the name "space support team." Again, we are trying to make space support routine.

Our space community is working hard today in making progress, but the way ahead will be challenging. We are focused on implementing Secretary Widnall's vision for space: routine and reliable support to the warfighter, developing more affordable launch capability and pursuing

civilian/military cooperation in what we call convergence, which is cooperation.

As we consider the way ahead, let me say a few words about some of our challenges for the future.

A big challenge for our intercontinental ballistic missile force is to continue achieving high standards of our proud past with weapons systems which are aging. We are doing just that with our current and planned programs to replace booster propellants approaching the end of their effective shelf life, restoring infrastructure and modernizing control systems — a sizable budget effort.

During the past several months, we have made substantial progress on getting support for the space-based infrared system (SBIR). Our existing Defense Support Program [DSP] satellites have served us well, but they don't give us all of the information the warfighter CINCs need to do their jobs in theaters of operation. Especially in light of today's and tomorrow's threats as they proliferate. We believe we've done a good job in balancing the stated requirements with technical achievability and affordability so we are off to a good start with the replacement process — with consensus on requirements. As an aside, we took the operational requirements document to the Joint Requirements Oversight Counsel [JROC] a couple of weeks ago, and it was approved. So I think we've really got a good start on fielding this important system. I know it was General Horner's number one system and it continues to be ours.

Affordability is also the big issue facing us in the area of launch. The Department of Defense has developed the need for an evolved, expendable family of launch boosters. The objective of this effort is to drive down the cost per launch which is now very expensive. This will increase performance and reliability and, therefore, make our space launch capability more competitive. This will benefit us

all. We are writing now, in our command, the operational requirements document and our work, in cooperation with industry, will reap big benefits over the next four months. The Global Positioning System or GPS constellation is up, and it works well. We are currently working on ways to provide better service, both to our military and to our civilian customers while denying any advantage of this capability to would-be adversaries.

Military and civilian cooperation in space will be essential to the viability of all sectors, and the key to innovation, competition, affordability and products that work — and can be fielded in time — to meet the need. All these elements add up to “the edge” that makes America great and keeps us at the forefront. Most importantly, it gives our fighting men and women the where-with-all to win on the battlefield.

I know the subject of this symposium is air power but without effective capability in the high ground and important medium of space, we cannot be effective in today's battle space.

That is why space support to the warfighter must be routine.

That is why space launch must be affordable.

That is why military/civilian cooperation must improve.

That is why we are committed to

achieving these three goals.

Again, thank you for the opportunity to join you. I am honored to be here representing the great men and women, military, civilian and contractor, of Air Force Space Command, U.S. Space Command and NORAD. I am proud to be teamed with all of them and with you.

I look forward to working with the Air Force Association and the defense community to continue to build on and improve our nation's space forces and the capabilities which so vitally contribute to the nation's warfighting capabilities. Thank you.



SUMMARY

- FORCE ENHANCEMENT FROM SPACE IS ESSENTIAL TO WINNING TODAY'S WARS
- MILITARY - CIVILIAN COOPERATION IN SPACE IS VITAL TO OUR NATIONAL INTEREST



AIR POWER:
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QUESTION AND ANSWER SESSION

GENERAL HATCH: *You mentioned both theater missile defense and cruise missile defense. In terms of priority, are they equal or does one have more requirement than the other?*

GENERAL ASHY: I think they are equal. What we do is driven by the threat. As I mentioned, right now in theaters of operation, we have Americans and allies threatened so we need to field a theater missile defense which incorporates systems for ballistic missiles, air launched cruise missiles and surface launched cruise missiles.

Obviously, Russia and China have the capability to threaten us with ballistic missiles. From our assessment, an attack through a deliberate act is very unlikely, and unlikely based upon an accidental or rogue attack. That leaves the question, "what is the assessment for being threatened by a third world nation." That assessment predicts a threat by the middle of the next decade. So both areas are very important.

The assessment suggests a need for a national missile defense by the middle of the next decade. We have a significant technology readiness program to prepare ourselves for the decision when the time comes, approximately three years from now.

GENERAL HATCH: *Thank you, Joe. Second, what progress are you making in the ability to provide off-board targeting data to the shooters?*

GENERAL ASHY: It is being worked

very hard. I can't get into details in this forum. Let me just assure both you and the audience, there is a lot of thought and effort in technology development being put into it.

GENERAL HATCH: *Thank you, Joe. What do you see down the road on military satellite communications? Will you identify MILSTAR follow-on requirements and possibilities for commercial augmentation?*

GENERAL ASHY: As most of you know, there was quite a discussion and debate about MILSTAR, particularly the purchase of MILSTAR five and six. Since last fall, the decision has been made, based on a requirement, to purchase MILSTAR five and six as a gap filler in the transition between the military satellite communication system and what is now known as the follow-on military satellite communication system. We have that sorted out. We are now working on the follow-on military satellite communication architecture and requirements. The follow-on system will have a segment or a fraction that will be military unique, but we will also rely heavily on what the commercial sector is using on commercial satellites. The commercial sector brings affordability and doability in their systems, and I predict we will rely on them heavily.

As a status report, let me say we are now working on the Mission Needs Statement in consonance with the architecture now being written by Mr. Paige [Honorable Emmett Paige, Jr., Assistant Secre-

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tary of Defense for Command, Control, Communications and Intelligence] and his people. We hope to have that done by the end of the year.

GENERAL HATCH: *Thank you, General Ashy. Do you have a projected IOC [initial operational capability] for space-based IR.*

GENERAL ASHY: Again, SBIR is the space-based infrared system that will replace our DSP program. We need it not only to give us strategic warning and a continuing and enduring mission in that regard, but to give us improved warning as the ballistic missiles in theaters of operation proliferate and specifically, as they burn shorter and dimmer making them harder to detect. As a result of some great work that was done last summer, we have consensus on requirements.

We presented those requirements to the Joint Requirements Oversight Council, and they've been approved. So I think we have a good start. The IOC, based on our reading of the technology available and the affordability of the system, will be probably around 2002, or in that time frame. It will be a constellation of four geosynchronous satellites and two in elliptical orbits to give full coverage. There is an option to buy a low earth constellation that will possibly give cueing and tracking information based on some testing that is needed to demonstrate the system. But that is a few years off.

GENERAL HATCH: *Thank you, General Ashy. We have a number of NATO allies represented in the audience. What is the potential of future military space program cooperative efforts with our NATO allies, including France.*

GENERAL ASHY: That is a very good question. It is certainly in our interest to cooperate with our allies. One area is "shared warning," and we are working on that right now as a matter of fact.

When you investigate the potential advantages to our nation through coopera-

tion with our allies, a key is deterrence. If nations around the world know that they are going to be detected, tracked, discovered and reported on, it will deter them from a rogue attack, thus providing stability.

This is a very important area. We, in the U.S. Space Command, through our components, The Air Force, Army and Naval Space Commands have the capability to provide this information to theaters of operation. We ought to involve our theater CINCs in that regard, but how that information flows will be a policy decision. But we're prepared to support those initiatives.

GENERAL HATCH: *Thank you, General Ashy. Could you provide an update on the status of the plans for a Joint Space Warfare Center.*

GENERAL ASHY: As I mentioned, we have an Air Force Space Warfare Center. There was legislative language last year that asked us to stand up a Joint Space Warfare Center and delete the Air Force Space Warfare Center. We've been working on that. The services organize, train and equip, and we, the Air Force, have the prerogative to have our own space warfare center. We are going to maintain that.

We got busy on the joint space warfare center, which we have now accomplished and finalized to General Shalikashvili [General John M. Shalikashvili]. Basically, its functions could be to do applications work with TENCAP [Tactical Exploitation of National Capabilities Program] for example, to look at tactics, techniques and procedures and help to do teaching and build on the synergism of all that being in the same building and the same place, to do modeling, to do Red versus Blue wargaming, to do testing, and last but not least, to support the warfighter through teaching and through the space support teams.

My vision is that we need to get the space support teams into line units configuration so the theater CINCs and com-

ponent commanders know exactly who these people are because they work with them every day. We lined all those functions up and we got consensus from our components in the services and we submitted this proposal.

In the meantime, General Mal O'Neill [LG Malcolm R. O'Neill, Director, Ballistic Missile Defense Organization] and I got together and we discovered that three or four of those functions were his functions, too, in the same building, called the National Test Facility at Falcon so we changed the proposal slightly to merge the two together and to call it the Joint Space and Missile Defense Warfare Center because it will eventually report to me in my U.S. Space hat. That is a summary of the proposal. We've given it to the joint staff and General Shalikashvili. They are looking at it and I don't know what the outcome will be. If it is approved, I anticipate it being stood up sometime this fall.

GENERAL HATCH: *Thank you, Joe. We have a final question for General Ashy. Secretary Widnall spoke about dual use facilities with commercial industry and United States Air Force at Vandenberg Air Force Base. What progress are we making in that effort?*

GENERAL ASHY: She and we have cooperated with the commercial sector, particularly in the latest case, which is an excellent example, at Vandenberg, where the commercial sector has leased space and are going to build a facility. We are going to lease our facilities to have a western space port. This is an example of the co-operation that we have in national policy, and I think this will continue.

To involve the commercial and civil sectors is a key to our future to ensure we build upon and take advantage of what the commercial sector brings in terms of their competitive atmosphere. That will help us all in terms of capability and affordability, where we can take advantage of it.

GENERAL HATCH: *Thank you for being with us, Joe. We know it has been a long day but we appreciate everything you do. Ladies and gentlemen, that concludes our proceedings for today.*

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BUILDING AN AIR FORCE FOR THE NEXT CENTURY

We are at a crossroads in history. The collapse of the bipolar "world order" that came to dominate international affairs over the past 50 years has left us facing a world that is both safer and at the same time more turbulent.

We have dramatically reduced the likelihood of nuclear conflict. Yet, we face a more confusing world with ethnic tensions and an increased potential for regional conflict. As a result, the nation has changed its defense focus from a very narrow view, dominated by a monolithic threat to the security of the United States, to a much broader view in which threats to our national interests are less direct but decidedly more diverse.

As a nation, and as a service, we face an extended period of great uncertainty. At the same time however, we face a period of great opportunity. The diminished direct threat to the United States has allowed us the chance to reduce and re-focus the Air Force. By making our forces leaner, more flexible, and more efficient we can safely meet the obligations of our national security strategy today. By addressing the concerns of our military personnel and continuing to provide them a good quality of life and challenging work environment, we preserve our capabilities for tomorrow. And, by continuing our research and development programs, our cooperation with industry, and selective modernization programs, we can ensure the nation's defense through the next century.

These three themes, the Air Force to-

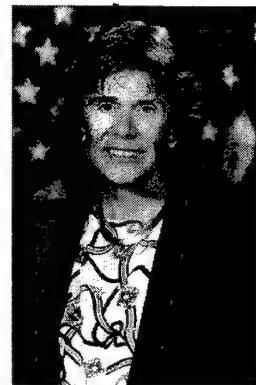
day, the Air Force tomorrow, and the Air Force of the 21st Century are very much intertwined.

The Air Force today is smaller, more efficient, and in many ways more capable than the Air Force of a decade ago. We have endured significant organizational change and institutional turbulence over the past four years as we have drawn down in size. The good news for Air Force personnel is that we have essentially reached our Bottom-up Review, or BUR, force levels...four years early!

The decision to draw down our force structure to BUR levels early was a conscious one. For although we recognized the turbulence associated with that decision, we also recognized that if we're to prepare for the years ahead, we had to focus our resources on those forces and in those areas where the greatest long-term benefits lie. We drew down quickly to free up funds for modernization...both through the upgrading of existing systems and the continuation of efforts to develop new and revolutionary systems such as the F-22 and the B-2.

"The Air Force today is smaller, more efficient, and in many ways more capable than the Air Force of a decade ago."

Our reorganization has also left us poised to take advantage of the capabilities embodied in a smaller, highly capable



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force. The creation of Air Combat Command eliminated the artificial distinction between tactical and strategic forces and provides for more effective focus and preparation for air campaigns. The development of U.S. Transportation Command and Air Mobility Command enables the seamless integration of the Nation's global mobility forces — critical components of our national military and security strategies.

"We have been unable to reduce our infrastructure as much as we have reduced our manpower and forces."

We have eliminated management levels and empowered our commanders at all levels. And finally, we are seeking to streamline space management to make the best use of the resources that all of the services contribute to this increasingly important area of operations.

Although we have almost reached our planned 1999 force structure levels, we face two ongoing challenges in this area. The first is that we have been unable to reduce our infrastructure as much as we have reduced our manpower and forces. We have reduced our force structure over 30 percent, and our fighter and bomber force structure over 50 percent. But, we have only been able to reduce our infrastructure about 15 percent. We must continue to press for reductions in this area — to consolidate depot support facilities and to close surplus bases and installations.

The second challenge we face is in trying to obtain the benefits of these actions. By downsizing early we have increased the funds available for modernization while maintaining the readiness of our smaller force structure. The readiness challenges the Air Force faces are, for the most part, not budgetary. These challenges are chiefly due to operations tempos and changes in

the types of missions we face in today's world.

Many of the UN operations we are presently supporting do provide valuable experience. But, they often do not provide our personnel the opportunity to maintain proficiency in all of the tasks necessary to be prepared for more intense conflict. Also, for limited-number, high-value systems such as HC-130s, EC-130s, or AWACS, it is difficult to maintain high operations tempos and still have sufficient resources to train new crews.

We are addressing these challenges by adjusting our deployments and training procedures, and making fuller use of our Guard and Reserve forces. With continuing budget pressures however, our modernization accounts are continually being raided to pay for other programs within DOD. We must stand up to these pressures.

The key to our future is maintaining a balance between readiness, quality of life and modernization. We have reduced our forces to pay for modernization, and now must stand up to the budgetary challenges to keep those modernization accounts intact.

These are the challenges we face today. As we look further into the future we see a different set of challenges. The greatest of these is in guaranteeing that the Air Force of tomorrow will be capable of meeting the concerns of our people.

"For limited-number, high-value systems, such as HC-130s, EC-130s, or AWACS, it is difficult to maintain high operations tempos and still have sufficient resources to train new crews."

We have built a remarkable team of men and women, active and reserve components, and uniformed and civilian per-

sonnel. This Air Force team within the larger team of other service and coalition partners brought us a brilliant victory in the Gulf War, and has enabled continued operations like SOUTHERN WATCH, DENY FLIGHT, PROVIDE COMFORT, UPHOLD DEMOCRACY, and many others over the past five years. People are the heart of the Air Force today, and maintaining the quality of our personnel will be our greatest challenge in building an Air Force of tomorrow.

Quality personnel are the most critical part of any organization. I see three major requirements to ensure the Air Force has the skilled women and men we will need in the future. We need to continue to attract men and women to the service; we need to ensure they have the best training available to do their jobs; and we need to ensure they enjoy a quality of life and the job opportunities that will challenge them to remain in the Service.

Attracting quality women and men to the military is a tremendous challenge in today's environment. Part of the difficulty is that we simply are not getting the word out that we are still hiring. We still need to recruit over 30,000 enlisted personnel and approximately 4,000 officers a year. That's a tremendous number of people and a difficult task in today's workplace. We must do a better job of telling our story.

The Air Force and the military offer unique opportunities. We provide training and education, a work ethic, and a reputation for integrity that is increasingly sought by employers around the nation. We offer a sense of camaraderie and belonging that are rare indeed in the world today. We give challenges and a sense of duty, of accomplishment, and of meaning in a world increasingly lacking in all of those. In short, we provide the youth of America an opportunity to reach their potential and their dreams. That is the story we need to tell.

In telling that story we need to exam-

ine our recruiting efforts and our funding to ensure our recruiting forces have the resources available for them to do their jobs. Broadening source officer commissioning programs are also essential. OTS, ROTC, and the Air Force Academy are all important programs. A strong ROTC program is especially important, as it provides a powerful tool for military personnel to interact with the faculty and students at civilian colleges and universities.

Junior ROTC is also vitally important. It reaches into the inner cities and provides our youth the role models and tools to better prepare themselves for the future, whether or not they decide to opt for a military career. Junior ROTC is important because it helps us ensure the pool of high quality, well educated youth necessary to meet the needs of the nation in the decades ahead.

Attracting people is only the first part of the challenge. We must ensure the men and women we bring into the service have the best training we can provide. As I mentioned earlier, the heavy operational tempos we have experienced over the past five years have placed increasing demands on our people.

"In short, we provide the youth of America an opportunity to reach their potential and their dreams. That is the story we need to tell."

We are looking hard at these difficulties and are coming up with innovative solutions. In AWACS, for example, we have identified a number of aircraft as designated training assets to ensure instructors and aircraft are always available for training. Higher OPS TEMPOS do not automatically translate to readiness problems. They do, however, require that we closely monitor training, morale, and deployment

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rates to ensure our personnel are trained to meet the variety of missions they are tasked to perform.

The B-2s range, stealth, large payload, and quick intercontinental response time will significantly improve our nation's ability to determine the course of a conflict at its outset.

In addition, we must make sure our commanders have the tools necessary to do their jobs. In a sense, this too is training. The rapidly growing demands of command require that our commanders become more familiar with a broader variety of subjects such as environmental issues and the many legal and judicial aspects of command. We must ensure that we make them aware of these growing demands on their skills and ensure that they have the resources to deal with the challenges they face.

By doing this we will help our commanders deal with the needs of our people. And, meeting the needs of our people is essential if we are to maintain their quality of life. We must ensure our personnel have a fair package of pay and benefits. But, we must do more than that. We must also make sure our personnel have a challenging work environment free of harassment and discrimination. And, we must also ensure we maintain strong programs to ensure the families of our deployed personnel are well cared for.

All of these areas are important. And, in total, they are critical to attracting and maintaining the personnel we need in the Air Force for today and tomorrow.

I've discussed readiness and quality of life issues that are essential to maintaining a quality Air Force for today and tomorrow. To ensure the long-term future of the Air Force, we must also address

modernization. Air and space power are a core competency of the United States, and especially the US Air Force. We invested heavily of our national treasure to build the forces that enabled us to deploy to and win the Gulf War and to sustain the myriad of operations that we now conduct. These capabilities are not self sustaining. They require continued investment and commitment.

The United States and our coalition partners dominated air and space during the Gulf War. This dominance enabled us to control the pace of the war, to limit both civilian and military casualties on both sides, and to secure victory. This dominance of air and space must be maintained if we are to be successful in future conflicts. To meet this challenge I see five modernization priorities over the next decade. They are the C-17, B-2, F-22, upgraded precision munitions, and the development of improved space launch capability. These systems will enable us to meet the challenges of the future within the budgetary climate we foresee in the years ahead.

The C-17 is TRANSCOM's and the Air Force's highest near-term modernization priority. As our future core airlifter, it will enable us to arrive quickly at any major regional contingency. The C-17 will also enable us to meet the day to day challenges of the turbulent world in which we live. It is already becoming a success story, replacing the C-141 at lower operating costs while delivering C-5-type payloads into C-130-size airfields. We may also purchase non-developmental aircraft to augment the C-17's capability.

The F-22 and B-2 will also play vital roles in the Air Force of tomorrow. The F-22 will give us the ability to achieve air superiority quickly in a future conflict. Air superiority provides freedom of maneuver so ground, air and naval forces can operate with impunity to end conflicts quickly

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and decisively.

Its inherent flexibility will also allow us to use the aircraft to conduct ground attack missions as well as counter air missions after the opening stages of a conflict. The F-22 epitomizes what any prospective adversary respects most about American military power: it is sophisticated, responsive, flexible, and extremely difficult to defend against. The F-22 is a *national program* that our country needs.

The B-2 provides the most versatile and responsive strike capability in the world. It can respond to crises in a matter of hours with precision weaponry to deter or blunt aggression anywhere on earth. Six B-2s could execute an operation similar to the 1986 Libya raid, but could launch from the United States, with a much smaller, more lethal and more survivable force. The B-2's range, stealth, large payload and quick intercontinental response time will significantly improve our nation's ability to determine the course of a conflict at its outset.

Our fourth modernization priority is to upgrade our precision guided weaponry. The Air Force has made a precision commitment. We have tripled the number of precision-capable platforms since the Gulf War, we've boosted PGM inventories 25 percent above pre-war levels, and are developing new generations of PGMs with enhanced accuracy, stand-off and adverse weather capabilities. Precision weapons allow us to hit more targets, with fewer sorties, less risk to our aircrews and significantly less collateral damage. They are true force multipliers.

Our fifth modernization priority is improving our space launch capability. Space is becoming increasingly important to our nation's military and economic might. Without free access to space, both are imperiled. Space modernization offers tremendous payoffs to both sectors. Joint military and commercial development of the Evolved Expendable Launch Vehicle

will ensure commercial and military access to space for the foreseeable future. This is a capability we cannot do without.

All of these modernization programs are important. They are important because they will enable us to conduct sustained air and space operations throughout the next century.

These are the challenges I see:

- To maintain readiness and necessary capability today;
- To ensure we meet the needs of our people and maintain readiness tomorrow; and
- To modernize our forces to remain effective and capable in the next century.

This agenda will be the fulfillment of the promise made possible by downsizing and restructuring the Air Force.

Beyond this agenda, I have chartered the Air Force Scientific Advisory Board, on the occasion of its 50th anniversary, to look beyond, into the future, and to assess the opportunities made possible by today's rapidly evolving technologies.

"Precision weapons allow us to hit more targets, with fewer sorties, less risk to our aircrews and significantly less collateral damage. They are true force multipliers."

The years ahead represent both a challenge and opportunity. Meeting the challenges enables us to do our mission in the world today. Taking advantage of these opportunities will enable us to do our mission in the world of tomorrow and the next century. Both are essential paths to the future.

Thank you very much. I'd be happy to take any questions you might have.

QUESTION AND ANSWER SESSION

GENERAL HATCH: *Thank you, Secretary Widnall. It is always a pleasure to have you with us. We have received a number of questions for you. You talked about reducing infrastructure. We know the BRAC [Base Realignment and Closure] results will not be officially available until next week. Do you think this round of base closures will do it, or do you think we will have a need for continuing closures beyond what we hear in 1995?*

SECRETARY WIDNALL: This is my personal view on this issue. We look for a period of stability. We have just completed, as you know, the last round in a series of BRAC rounds that occurred every two years. We made a number of important decisions. My own personal view is that it is really time to have a period of stability and work through the implications of all the changes we've put on the plate. It will also give us an opportunity to sense the needs of the future as they emerge. I literally cannot imagine starting another round with another set of recommendations in two years. It just seems too quick to me. Who can predict the future, and I don't think we can do it in these two year chunks for very much longer.

GENERAL HATCH: *Thank you. We have a number of allied nations represented in the audience and the question says, "How do you view the prospects for cooperative development programs with our international allies?"*

SECRETARY WIDNALL: That is a big subject. We have so many programs with our allies and coalition partners, all the way from training and joint exercises and professional military education and officer exchanges to joint technology programs. This is an extremely important contribution we can all make to the future stability of the world -- to continue to find ways to work together. I am absolutely in favor of it.

GENERAL HATCH: *Thank you, Madame Secretary. The next question talks about our in-house laboratories and contract services. What do you believe is the proper balance between in-house labs and contract science and technology?*

SECRETARY WIDNALL: That is a subject we are continually reevaluating. Right now the Air Force has a very healthy balance between the work that is done in-house in our laboratories versus our interaction with the commercial world. I believe it is about 80-20 commercial versus in-house work. What is going on in acquisition reform, and we are all aware of this in science and technology, is the Air Force is no longer the technological leader in every field that we need to be in. So we are looking for even more ways to buy commercial products; to work cooperatively with the commercial world in development. If anything, you might see the balance shifting toward even more interaction with the commercial sector.

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GENERAL HATCH: *Thank you. You said efforts were underway to streamline space management to make the best use of DOD resources. Can you tell us what progress you are making in that area?*

SECRETARY WIDNALL: We have made a lot of progress, and again I am not prepared to give a speech on the topic, and it is a fairly complicated topic. But, the Air Force is the big player in space. We have 90 percent of the people and 85 percent of the money, or maybe it is the other way around. We not only are thinking about space management in the abstract. In other words, how would you organize it? But, we are using the space-based infrared satellite as a case study on how we can work cooperatively with all of the players in space while at the same time have a stream-lined acquisition program. So I think the space-based infrared system is an example of what can be accomplished in space management if we all work together.

I anticipate giving a speech on the whole issue of space and space management at the upcoming space symposium in Colorado Springs where I'll have a chance to lay out more of the details about the expendable launch vehicle program and space management and some of our satellite systems. Stay tuned.

GENERAL HATCH: *Could you address commercial development of the evolved expendable launch vehicle?*

SECRETARY WIDNALL: That is a very big topic. It is extremely important to the Air Force. That is really one of our new starts this year in a very tight budget environment. We are committed to moving ahead on a new launch vehicle. It is an outgrowth of the Moorman studies. We are excited about it and we look forward to working with industry in an innovative way to deliver a new launch system for the nation.

GENERAL HATCH: *Thank you,*

Secretary Widnall. *The next question relates to non-defense spending, which has been a particular target in Congress this year. Is there any such spending in the Air Force budget that you think could be redirected?*

SECRETARY WIDNALL: I think non-defense spending is in the eye of the beholder. Those parts of the Air Force budget which many would claim are non-defense spending have to do with cleaning up bases before we are able to return them for productive use by the local communities as well as some environmental issues that we have on bases we intend to keep. We do, in fact, have many examples of leakages of pollutants into the local ground water, and we absolutely must take appropriate measures. We are bound by law and regulation as well as our own good sense to be good neighbors. So, we do spend a fair amount of the Air Force budget on that issue. The Air Force, in fact, has an extraordinary record and has been cited as one of the leading federal agencies in responsible environmental treatment. So, it is an extremely important issue with us.

There are a lot of programs that you can argue about such as dual use technology. The Air Force has been a technology leader. We have benefited from the investments we've made in technology and the commercial sector has benefited as well. There are lots of opportunities in the dual use technology area for us to partner with industry and end up actually spending less on products that the Air Force really needs. We are going to see a lot of debate about that issue.

But, the Air Force budget reflects Air Force priority and there isn't anything in there that should be attacked as not being an appropriate use of taxpayer money.

GENERAL HATCH: *Thank you, Secretary Widnall. How do feel about the prospects for the C-17 and the B-2?*

SECRETARY WIDNALL: The C-17 is just a fantastic program and really

has become a success story for anybody who has not been looking lately. As many of you saw in the hall, it just received the Collier trophy. It has really become a success story as an aircraft. We look forward to November of 1995 when we will be able to make a decision about going forward with additional commitments on the C-17 versus purchasing commercial, off-the-shelf aircraft for our airlift needs. I am very big on the C-17. You may know I delivered the 13th airplane from Longbeach [Calif.] to Charleston [AFB, S.C.], and I am just in love with that airplane.

The B-2 is a greater airplane. It is revolutionary technology. It is just very exciting. I hope to fly it in about three weeks. Again, I am very big on the B-2. Actually, when you think about it, as tight as the budget environment is, we are doing rather well with our modernization programs. We have a very strong commitment to keep them on track and we appreciate all your support. These programs are all important to the Air Force and they are actually quite remarkable if you stop and reflect on what we've been able to accomplish.

GENERAL HATCH: *A final question for the Secretary. We all know of your strong support for Air Force people in the long range planning the Air Force is now doing. How are you going to approach people programs such as retention, medical care and family services?*

SECRETARY WIDNALL: That is probably too long a topic to even begin to enumerate. Commitment to the people is fundamental. It is a commitment that is based on substance. Training is an important part of that — making sure we adequately train the people. Support of families is an important part of that. Our support to bases for housing, dormitories, and all of the other base services we provide to families. Concerning medical care, I think many of you know that we are reorganizing our medical care into the Tri-care sys-

tem. There is a lot of enthusiasm among the doctors on that. They see a lot of opportunities so they are very enthusiastic about where we are going. It is a fulfillment of that commitment to the Air Force people.

GENERAL HATCH: *Thank you very much for being with us today, Secretary Widnall. We appreciate all you do for our United States Air Force.*

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GETTING THE AIR FORCE INTO THE 21ST CENTURY

Thank you for that warm welcome. It's always a pleasure to be here and to be with those people who have done so much for our Air Force. By that I mean the members of the Air Force Association, the industry representatives who support the association, the retired and active duty members.

I know we can thank the Association for shining a spotlight on the feats of our Air Force. I also know our outstanding men and women today get a lot of recognition through the efforts of this organization. In fact, it's the reason I've always looked forward to the national convention in the fall, when we recognize our best flying crews, our best tacticians, our best space crews, our outstanding airmen, and all the others. It's a great tribute to the men and women who make the Air Force what it is today. You also play a valuable part by informing the American public about how air and space forces serve our nation. So, at the beginning of this presentation, I'd like to thank the Air Force Association for your support.

When General Hatch asked me here, he asked me to talk about the Air Force in the 21st Century. Well, you may be surprised to learn that my first reaction was to look back, not forward. The fact of the matter is, the history of warfare is essentially the history of change. Every conflict involves the participants learning from the previous conflicts and adding new technology to the fight. There's a wonderful book written back in the 1950s called Ideas

and Weapons¹. The whole thesis of the book is to determine what comes first — is it a really good idea that someone turns into a weapon? Or, do we develop, through technology and innovation, a weapon that we do not see the manner in which it will be employed in war? Along these lines, we recognized during our American Civil War how valuable railroads would be. It was during this same war, we came to appreciate how lethal modern firepower could be on the battlefield. In fact, during the Civil War, you could describe that contest as a war fought in the 19th century, with 18th century tactics and mindset on the part of most generals, with emerging 20th century firepower. And, it resulted in great carnage on the battlefield. Later, in World War One, while we saw the introduction of the tank and aircraft, they played little role in preventing the tremendous casualties suffered by both sides in static warfare fought with little imagination. Their impact would only be felt in the future.

So, in looking ahead to the 21st Century, we should expect it to be marked by the appearance of new technologies. I realize that any discussion will naturally turn to what this new equipment will be. At this symposium, I've elected to leave the "what" to the Secretary and to the other four-stars. I know that yesterday you heard about our combat and overseas forces from Mike Loh and Jim Jamerson. You heard about space from Joe Ashy. And, you've heard how we'll logistically sustain these forces in the future from Ron Yates. Later



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today, you'll learn about the training and mobility parts of the equation from Butch Viccellio and Skip Rutherford. So, you're hearing the senior leadership discuss a wide range of future Air Force capabilities.

"We need to move down another path that offers greater opportunity, greater lethality, greater flexibility. . . I call this approach 'looking back to the present'."

I'd like to use this occasion to talk about how we get to the future. This isn't going to be as meaty as some of you would like. But, it's important to figure out how we're going to get to where we need to be if we are going to stay relevant, if we're going to continue to be, as we are, the economy of force capability for this nation, in a period in which we see a downturn of resources.

And, as the Chief, how we get there is one of my fundamental concerns. In my view, there are two basic approaches we will most likely use to get there. First, we could follow the traditional, programmatic approach. This might seem most likely when you recall that the last four Chiefs of Staff of the United States Air Force have been programmers. This approach tends to look forward with a budgetary mindset that operates within the stovepipes of mission capabilities that have emerged over time. It served us well. But, I think we are on a threshold in the area of technology. I say this not because the clock is going to turn from 1999 to 2000. That's an artificial thing. I say this because of the rate at which technology is accelerating and coming down the road toward us. I have some concerns that this programmatic approach constrains our expectations with present fiscal concerns. On the other hand, it's fairly safe, but it doesn't lend

itself to an imaginative view of what our Air Force should and can do.

The other approach, the one I suggest we need to take . . . is to fly into the future, maybe to the year 2020. Then, we should put ourselves in a low earth orbit, in a position to take a look at what the world will most likely look like, at what society will be like, and what warfare in this period of time will be like. Armed with this perspective, we should look back to the present and identify what path we must take to get us where we need to be in the year 2020 to provide the nation the air and space forces it needs.

That's very different from continuing down the path we're on today. From that perspective out there, as we look back, we can see where we ought to terminate something, shift and move down another path that offers greater opportunity, greater lethality, greater flexibility. We need to take this approach.

I call this approach "looking back to the present." I think it might be a little revolutionary. At the same time, it's just a common sense way to get the kind of Air Force we need in the next century. I guess my point here would be that a programmatic mindset tends to measure your progress by what's behind you, not what's ahead. And, it tends to favor incremental improvements. It will forgo bold and innovative plans because of short term funding needs. I don't mean to abandon short term needs. But, I think we must critically examine when a weapon system, an idea, a concept is reaching the sunset part of its evolution and not wait for that to occur. In parallel, we must be developing the capability that will replace it. That is very difficult to do standing here and looking forward. I think if we try to project ourselves and look back, it's easier.

I say this because air and space power is technology based, and by its very nature, forces us to act in a revolutionary manner. If we do not act in revolutionary

ways, with technology advances, particularly those in the information based disciplines where advances are coming so rapidly, we may not be relevant in the next century. So, we must think creatively about what we do and how we do it. As proponents of air and space forces, we must anticipate the future. With that to set the stage, what kind of future do I see and what are the tools that will allow us to get there?

"Air and space power is technology based, and by its very nature, forces us to act in a revolutionary manner."

To describe our future society, I'll tell you that I don't have any kind of a magic window that is any better than yours. And, I risk trying to make matter-of-fact predictions. But, I think there are some statements we could agree on about the U.S. in the 21st Century.

First of all, I think the U.S. will remain engaged around the globe. Culturally and economically, our society will reflect more and more the diversity of the world. With GATT and NAFTA, it is easy to anticipate how there may be even greater movement to a single, global economy. And, when these factors are combined with our heritage of freedom, I expect U.S. diplomatic and political counsel will be in high demand around the world. As such, our military forces will shape, lead, and conduct coalition undertakings, much as Jim Jamerson described yesterday. These operations will run the gamut from humanitarian relief, to peacekeeping, to full scale conflicts, like DESERT STORM. I think this is a plausible description of our world early in the next century.

At the same time, it is reasonable to assume we may remain the world's only superpower. I've heard it suggested and read it in a couple of places, that, for the

first time since Rome, there is only one great power in the world. But, we all know what happened to Rome. At some point, we will be challenged — by a single nation, a coalition, or group threatening our society. I think the terrorist bombing of the Trade Center in New York is a clear reminder of this very serious kind of risk.

My crystal ball doesn't show who this actor or actors will be. I think that we became very comfortable with the Soviet Union as a convenient adversary during the Cold War. The Soviet Bear allowed us to predictably look at who and where we might have to fight. A lot of people are having trouble letting go of the Soviet Bear. Now, in the post-Cold War period, we don't have that construct. Instead, I think it's prudent to focus on the capabilities, the capabilities our forces must bring to the table — not so much on whom we might face — but what it is we will be asked to do as a military force, as part of the joint team.

Any combination of developing industrial powers could, in my view, quickly become a serious challenger to America's interests. And, if you think about the proliferation of relatively cheap and lethal weapons on the battlefield, it will tend to level the battlefield in the conventional sense. That is, conventional aircraft are going to have a very difficult time surviving in a world in which third world powers, with relatively little money, can purchase very sophisticated surface-to-air missile systems such as those the Former Soviet Union is proliferating. This is going to cause us to relook at how we engage. We are already doing this, but it is going to accelerate in the next couple of years.

"If we do not act in revolutionary ways, . . . we may not be relevant in the next century."

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Now the “Fogleman Forecast” isn’t going to compete with the futurists’ books being sold out there. But, I think this brief look will provide a background for what I want to talk about. So now, let me narrow the scope a little by turning to a few defining characteristics of how warfare might be conducted after the turn of the next century.

“I think it’s prudent to focus on the capabilities our forces must bring to the table — not so much on whom we might face — but what it is we will be asked to do as a military force, as part of the joint team.”

First, I see information having an ascending and transcending influence. Today, computers double their operating speed every 18 months. By the turn of the century, performing a trillion calculations per second may be the norm. And, I think this is going to have a strong impact on military operations across the spectrum.

We will need information quickly to recognize new threats to the nation. And, these dangers may rise with short warning. Our information management capacity will leverage our ability to pinpoint an adversary’s centers of gravity. And, with this kind of information, we’ll have a whole new discipline called information operations that will play a critical role before, during, and after any crisis.

The side that can capture the computing power I mentioned is going to have a tremendous advantage. Throughout history, soldiers, sailors, marines, and airmen learned a valuable lesson: the side that can analyze, act, and assess faster — will win. My point is this advance in information access and its use will allow military forces to operate inside their opponent’s decision cycle. And that is going to be decisive to

the outcome of future events.

If you want to take this one step further, consider the implications of warfare in which you control and monitor the flow of information to your opponent. If you can comprehend this, then you grasp the vast potential of information ops in the next century.

The importance of information to military activities will transcend all we do — on land, sea, and air. And so, the Air Force will not be the sole actor in this arena. I expect our airborne and space-based systems to be in high demand to gather and process information, but we will not monopolize this activity. The fact of the matter is that all services have a vital interest in exploiting the cyber medium. And, all will be involved in transforming this character of warfare.

A second macro theme of the next century will be the role of precision attack. When combined with the information ops I just described, you realize that we are entering a period in which we will dramatically reduce the time from detection to destruction of a target. In this area, I anticipate that air and space forces will play a key role.

These forces will have the speed, the range, the flexibility, and the lethality — in short, the responsiveness — to get to the desired point quickly.

Getting there quickly may deter — absolutely the best of outcomes — and may influence. But, if deterrence and influence fail, then the economy of force capability of engagement from the air will be vital to our nation.

“We are entering a period in which we will dramatically reduce the time from detection to destruction of a target.”

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Now, I realize that when I talk about "precision attack," you probably have the image of a single aircraft taking out a point target. We've created this impression by comparing how a lone F-117 can destroy what it took a hundred B-17s to do during World War II.

But, in the 21st century, our precision capability will allow this nation to attack in parallel, across an entire theater. Let me put this in perspective. First of all, I would invite you, if you haven't done so already, to go by the display that talks about the capability we will be fielding in the B-2 in the summer of 1996 with the GATS/GAM [G.P.S. Aided Targeting System/G.P.S. Aided Munition] system. One B-2 will allow us to simultaneously, with precision munitions, attack a whole target array. We are not talking about something that is not so far into the future that you cannot imagine it. It's nearly here today. By comparison, during World War II, the 8th Air Force attacked something like 50 target sets in all of 1943. During DESERT STORM, the coalition struck 150 individual targets in the first 24 hours. Not too far into the next century, we may be able to engage 1,500 targets within the first hour, if not the first minutes, of a conflict. Gone are the days of calculating aircraft-per-target kinds of ratios. Now, we think in terms of targets-per-aircraft.

So, from the sky in the aerospace medium, we will be able to converge on a multitude of targets. We will be able to envelop our adversary with the simultaneous application of air and space forces. The impact will be the classic ways you win battles — with shock and surprise. Shock and surprise. Every major turn in the history of warfare has come from the introduction of shock and surprise. It won't just be at the tactical level, but at the operational and strategic level as well. We are unique in this regard.

In the 21st century, our nation will need soldiers and marines to fight for and hold

the terrain. We will need a navy to protect and project influence over the sea. But, only air and space forces will allow us to engage an adversary's air, land, and sea forces — simultaneously. And, concurrently, air and space forces will hold at risk the enemy's national leadership and its economic power centers. I see this operational potential placing great demand on an Air Force — if we have the vision to put in place the capability to deliver what the nation will need. Other services will continue to exploit the aerospace medium for their forces. And, I think this is appropriate.

But, I will tell you that none of this is going to be possible without air superiority. As this nation's full-service Air Force, we must take the lead in the area of air-space control. And, as we look to the 21st century, the F-22 is the optimum approach to ensure our joint team will have air superiority, just like we've had for the last 50 years. In this country of ours, even within the military, we've come to assume that air superiority is a God-given right for Americans. It is not.

***"One B-2 [with GATS/GAM]
will allow us to simultaneously,
with precision munitions, attack
a whole target array."***

Our forces have enjoyed air superiority since the Marines, who fought gallantly, took such high casualties in August of 1942. You may recall that they were put ashore, and then due to the threat, the carrier forces had to withdraw for eleven days. As a result, those forces ashore sustained 5,000 killed in a very short period of time. And then, in the spring of 1943, at Kasserine Pass, the U.S. Army tried to operate in the absence of air superiority. Since that time, many of the people in this room, those in the aerospace industry and in the Air Force, worked hard — often

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times quietly, aware that air superiority is the key to warfare. With the dawning of the aerospace age, with air superiority, everything is possible; without it — nothing is possible! That's why the F-22 is not an Air Force program — it's a national program. And, it happens to represent a quantum improvement in technology.

"With air superiority, everything is possible; without it — nothing is possible! That's why the F-22 is not an Air Force program — it's a national program."

Let me give you a quick update on this critical program. Just this last week, the F-22 had a great success story for both the Air Force and the contractor team. The F-22 Air Vehicle Critical Design Review culminated its year-long effort. They reported that the design of the F-22 is mature and that the airplane can be produced and supported. Now, that design team is focused on building the first developmental aircraft to launch on its maiden flight in May of 1997. With this development, we are well on our way to meet the CINCs' air superiority needs in the 21st Century. The important thing to remember is that the F-22s supersonic cruise and stealth qualities will allow us to dominate all airspace in the future — for information ops, precision attack, and any other operation this nation wants to undertake.

I don't want to create an impression that these will be the only changes in warfare beyond the year 2000. But, I think these will have a strong influence in defining what our Air Force must look like. So, how do we get to this future? What are the tools we need to guide us?

First of all, we must have good people. The Air Force in the 21st Century is going to be lean, is going to be agile, and is go-

ing to be higher tech than the one we know today. We are going to need to function in a decentralized manner to keep up with the fast pace of events. Our people and commanders at all levels must know their business, their mission; and be ready to take the initiative to exploit opportunities that arise. And, the leadership has got to be willing to support the people with great ideas. I know Butch Viccellio will talk more about building this foundation, so I don't want to steal his thunder.

Secondly, we must give our people effective tools to do their jobs. You may recall 1993 was the Year of Equipping. The Air Force laid out a roadmap for our modernization needs to the year 2020. But, even though these plans were well thought out and fiscally reasonable, they marked the first time we, as an institution, in many years, had done some long-range thinking. So, they were remarkable for that fact alone. But, we needed something more daring, more imaginative. So, the four-stars got together not too long ago and made a commitment to what we call the revolutionary planning process — to capture the vast potential of air and space forces for the next century. This process has three distinct stages: there's an idea generation phase; then, there's a phase in which we investigate the merits of the ideas; and, finally, there's the phase in which we integrate these ideas into the Air Force program. This morning, I'd like to talk about this briefly.

First, idea generation. This is critical if we are to keep up with the potential of air and space forces. I recall that Giulio Douhet once said (and I recall some of the upper classmen present used to make me recite this), "Victory smiles upon those who anticipate the changes in the character of warfare." I like that. It captures the essence of what we've got to do — we've got to anticipate what we must do. And, I'm talking about more than just knowing what will be the leading-edge technology.

"In the first phase of recasting our planning process, we must foster more than just new technologies. We need to think about how to make them part of a world-class team."

Here's what I mean. In the 1920s and '30s, Germany, Britain, and France invested heavily in defense. All three purchased tanks and airplanes in great numbers. Yet, only the Germans had a well-thought out construct to exploit these new weapons. In the same manner, both Germany and Britain had radar. Some have argued that, technologically, German radar was the best around. Yet, Britain, with its less sophisticated equipment, had the initial advantage because they had a system that incorporated radar into an effective early warning network and teamed it with their fighter-interceptor aircraft.

My point is we must match the hardware with organizational and doctrinal concepts that optimize their use. This is going to be tough for the Air Force. It's tough for any institution. It's been said that the Air Force is a technology-driven service. I think this is true. We have often been captured by the technology we operated and we failed to look at the larger view.

So, in the first phase of recasting our planning process, we must foster more than just new technologies. We need to think about how to make them part of a world-class team. And, contrary to popular myth, all good ideas don't come from Washington. So, we're open to all sources. Air University's work on the SPACECAST study is a great example. You may recall that this was a pivotal work that identified where we should be and how we can enhance our space-based forces by the year 2020. As a follow up, we've asked Jay Kelley to take on a broader study and look

at the entire Air Force out in this time frame. We'll also look to other sources for ideas, like seminars and wargames. And, we'll include inputs from MAJCOMs. Ron Yates' Integrated Product Teams at Air Force Materiel Command came up with over 200 suggestions this past year alone. Finally, as Secretary Widnall indicated in her speech, we've asked the Scientific Advisory Board to launch a new study — *New World Vistas* — to identify the fields of explosive technology changes that offer the most promise for the Air Force.

All together, the concept generation phase should encourage our people to think "outside the box." We don't want ideas constrained by current paradigms. The reality check, if you will, comes during the second phase, when we investigate these concepts and we select the most promising ones to pursue. We'll ensure that these opportunities have a solid scientific foundation.

I think a critical part of this second phase is going to be our ability to model and simulate combat. This will allow us to experiment with new technologies, to explore their organizational and doctrinal impact, and to assess their overall potential. And, I'll admit, while we've made some great progress in the modeling area, we've got a lot of work to do.

"The concept generation phase should encourage our people to think "outside the box." We don't want ideas constrained by current paradigms."

DESERT STORM comes to mind as an example of why we've got to do better in this area. I recall hearing about a captured Iraqi troop commander who was asked why he surrendered. And, he said he surrendered because of the B-52. But,

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his interrogator reminded him, "Your unit was never targeted by B-52s." The Iraqi replied, "That's true, but I saw a unit that was, and that was enough." So, you know, after DESERT STORM, there were a lot "experts" who came out and said that you can't look at what happened in the desert as a window into the future because the Iraqis acted so irrationally. Well, why do you think they acted so irrationally? They were subjected to 39 days of airpower, in which we owned their airspace. That tends to make people act irrationally.

"When the results of that wargame were briefed, the extent to which air power had attrited enemy forces in the first few days was never mentioned. . . If this is true, it disturbs me, not just as an airman, but as an American. That, my friends, is intellectual dishonesty."

Now, there's already been a lot of revisionist history written about DESERT STORM. Some of it is really intellectually dishonest. We've got to guard against this. Last summer, there was a wargame conducted at the Naval War College. These are big deals in the press and get a lot of attention with decision makers. In this wargame, after the first couple of days, the combined air power from land and naval-based forces had so attrited the enemy order of battle, that they stopped the wargame because they would not be able to achieve the training objectives they had planned. They reconstituted the enemy forces and then continued with the wargame.

When the results of that wargame were briefed, the extent to which air power had attrited enemy forces in the first few days was never mentioned. In fact, just the op-

posite occurred — the outcome of the game, as it was reconstructed, was cited around Washington D.C. by some as an example of the ineffectiveness of air power. I am told the Commission on Roles and Missions was briefed using this kind of data. If this is true, it disturbs me, not just as an airman, but as an American. That, my friends, is intellectual dishonesty. And, it will cost us American lives in the future. We've got to be on guard for this. We've got to not oversell what we do — but we must never let the contributions of air power be undercut by those who would try to forward their own agenda.

So, this is why we have a challenge in the modeling business. We must capture air power's persuasiveness to make people act in such a manner. I know this is tough. We often want something scientific, with a mathematical formula, to assess air power's role in joint operations. And, we need a way to validate our weapon systems and our operational concepts. Competent modeling will be a key tool to guide us on our path to the future. It's important to be able to demonstrate the way we can help achieve their objectives when we discuss our core competencies with the Commanders-in-Chief. At the same time, it will allow us to show the American public what to expect from properly equipped air and space forces.

As I said in the beginning, the Air Force is an economy of force capability for this nation. We have been in the past and we will be in the future. What we've got to do is to continue to develop these new ideas and identify the high-payoff concepts, then integrate them into the budget process. This is where the programmer comes back into the picture. Having been one once, given a direction and priorities, I know they can get us there.

As I said, we're calling this approach "revolutionary planning." It's not a one-time event. We're making this a continu-

ous process, one we're going to update every year. And, we're going to institutionalize long-range planning on the Air Staff to support it.

So, I'm not sure if my crystal ball is any better than anyone else's in terms of predicting changes in the character of warfare. Whatever happens, we'll need fresh, innovative ideas to meet those changes. We need to break the Cold War molds of how we do business. A new approach in the resource allocation process will guide us to the future. This is a process, I'm convinced, that will be right for the Air Force, will be right for the joint warfighter, and, more importantly, will be right for our nation.

"The Air Force is an economy of force capability for this nation. We have been in the past and we will be in the future."

During this journey, I know there will be one constant — we're going to have the great support of those in the AFA and our partners in industry. You have consistently been solid supporters of the Air Force. I've enjoyed this opportunity to share my thoughts with you. And, I'd like to extend my appreciation to the AFA for hosting this symposium to address what our Air Force will look like in the next millennium.

¹ I.B. Holley, Yale University Press, 1956

QUESTION AND ANSWER SESSION

GENERAL HATCH: *Thank you General Fogleman for those excellent remarks. A number of questions ask about the Commission on Roles and Missions. What are your expectations for their output and any long term impact these results might have?*

GENERAL FOGLEMAN: At this point it will be very difficult to predict what will come out of the Roles and Missions Commission. They have labored hard and long. They have gathered a great body of information, and I believe they are beginning to feel the pressure of the May deadline. What John White is trying to do is shift from a report that will try to tell us how to organize and what function ought to be here or there, to one of trying to assist the department more with the processes we ought to go through to examine the questions of how we do resource allocation and allocation of functions, and roles.

GENERAL HATCH: *Thank you, General Fogleman. There are another group of questions that address the subject of readiness. Based upon the heavy OPS TEMPO that we see in our peace-keeping missions around the world, can our people and our force structure sustain this level of operation?*

GENERAL FOGLEMAN: That's a good question. Let me put it into context. The Air Force today is 34 percent smaller, in aggregate terms, relative to force structure, than it was at the end of the Cold War. The number of deployments have increased four-fold. The personnel activity is cer-

tainly higher. This should not be unexpected when we have a smaller force. Therefore, we have fewer people to do the same number of chores, and in fact, the chores have increased.

But, in absolute terms, the Air Force has about 415,000 people in it — 79,000 officers and the rest are enlisted. Yesterday, when I read the ops summary, we had 10,320 people TDY in support of operations around the world. So, 10,000 people out of a force of 415,000 is not a great percentage of the force — unless you happen to be one of the 10,320 and you happen to be on the 200th day of TDY because you happen to be in one of the weapons systems or functional areas that is heavily tasked.

We have worked hard to get the Air Force structure down to the Bottom-Up Review size. I would like to be given the opportunity to operate with this force structure for a year or so and be able to gather some data so we can make some fact-based decisions about whether this is enough force structure or not. We know, through wargaming, 20 TAC fighter wings — if allocated with the right kind of timing and lift — can do the Two MRC [Major Regional Conflicts] strategy.

Air power is very flexible. It allows you to do that. You can go somewhere, achieve air superiority, then withdraw some of those forces and apply them in another theater. There are considerations that go with it. We have a personnel tempo problem in certain areas of the force. We are

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trying to work on those.

We have gone to the JCS and received relief on taskings in the AWACS area and the ABCCC area, so we can get more airplanes at home and reconstitute the force. Mike Loh [General John M. Loh] is authorized 42 combat-ready crews in the AWACS. Because of our OPS TEMPO and there were not enough airplanes at the home station to continue training, the number of combat-ready crews dropped to 26-28 crews. So, those crews were gone a lot more.

We are now catching up to the problem. This caught us a little bit by surprise. We were postured for the Cold War and then got into this post-Cold War period in which the OPS TEMPO for these high value assets went up very quickly on us. We were not prepared and did not have the resources there to lead turn it.

GENERAL HATCH: *Thank you, General Fogleman. If the Air Force gets no more than 20 B-2s, the bomber force structure will age significantly over the next 10-20 years. At what point, should the Air Force move forward with the concept development on a new bomber to replace the remaining B-52s?*

GENERAL FOGLEMAN: I cannot give you a precise year. If you were to look at the force composition of the current bomber roadmap and if we were to have no more than 20 B-2s, clearly the situation we face is one in which we have three bombers that were built primarily for nuclear war. We are hurrying to get them configured so that they are capable of prosecuting a very effective conventional war.

The most effective of these bombers at this time, in terms of conventional warfare, are the B-52s. In the 1996 budget, we sustained a B-52 force of 66 total airplanes — 56 PAA [Primary Aircraft Authorized]. This will be the most capable of our bombers in absolute large numbers through the turn of the century because the B-2 will come on board with GATS/GAM [G.P.S.

Aided Targeting System/G.P.S. Aided Munition] in 1996 and we'll start to see JDAM [Joint Direct Attack Munition] coming down the road for the B-2 and the B-1.

The B-1 which is now only capable of carrying conventional hard bombs, will be capable of carrying CBUs [Cluster Bomb Unit] by the summer of 1996. We have a conventional munitions upgrade program for the B-1 which will make it a very capable, very viable force well into the future. It will become the backbone of our force. It will have the greatest number of aircraft in the three legs of the bomber force. I have had, in the past, some concerns about the B-1 — some serious reservations. I am encouraged by what we saw in the ORE.

But as I look at the B-1, I am trying to go back and remember another aircraft that we had in the inventory that is like the B-1 — one that from its very fielding had lots of problems for one reason or another. We as a force had almost given up, yet, because of some decisions we took as an institution we were able to turn it around. The aircraft that finally comes to the fore is the F-111.

The F-111 was a little bit ahead of its time. I remember when I went to the Air Staff as the fighter force programmer in 1979, I was given the task, along with the folks down at XOXFT, to write the papers that justified retiring the F-111 so we could send it down to OSD and get this lemon out of the force structure. And, we did it. We talked about low mission capable rates, and that it was hard to sustain. Then the next year came around and we had a defense build up. Suddenly we wanted to keep the F-111. We had to go back to the very same people that we had sent those letters bad mouthing the F-111 and now justify why we were going to keep it. We saw that we had a very hard road ahead of us. But, at that time, General Creech put together a program where we deployed

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F-111's to the UK in isolation, and we cannibalized the rest of the fleet to demonstrate what this airplane could do if it were properly supported. It performed very, very well.

We were able to take this data and go back to OSD and say this aircraft had great potential if properly supported. I must tell you that the bucks involved in making it supportable were big bucks.

We have an analogous situation now with the B-1. What is interesting though is for the B-1, we are not faced with the big bucks situation. The ORE [Operational Readiness Evaluation] showed us that with a different approach to maintaining the B-1 and with the way that ACC [Air Combat Command] has approached it, we can maintain a combat readiness that is acceptable with about \$12 million added to the budget. That is a pretty cheap investment to get tremendous capability.

Associated with that investment, but already on the books, is a conventional munitions upgrade program — about a \$2.7 billion program. If we follow through with these two programs, the B-1 will remain the key and the core of our bomber force well into the 21st century, and it will be a great buy for the nation.

But, somewhere out there, between 2010 and 2020, we are going to have to face up to what we do about the future of the bomber force. In my view, this is one of those things that comes right back to the points in my speech. Do we stay with an overfly system, or do we go to some radical, different approach that takes advantage of the information revolution — particularly as it marries the information revolution with weapons technology? Will we need a stealthy platform to be the next bomber? Or, could we continue to rely on the core B-2 force we have for those chores that require overflight, and we go to a whole different approach for bombing? I don't know, but these are the kinds of questions that we ought to be asking, and we

ought to be asking them now.

GENERAL HATCH: *Thank you, Chief. You mentioned F-111s, What is the status of the EF-111 program.*

GENERAL FOGLEMAN: There was a decision made in this budget cycle that the EF-111 would be funded through 1997 to give us the opportunity to go back and study the option of going to a single jamming platform. We were looking at the EA-6B.

As we worked through the issue this spring (we need to pick up the pace a bit) we have discovered there aren't as many EA-6Bs out there as we thought there were. There are a lot of them in the bone yard, and there is no money to upgrade the airplane. So, we have not resolved the concept of operations. Since stand-off jamming and penetrating jamming platforms are an integral part of how we do what we do, we are re-examining this whole issue. But, if left to the current decision and policy that is unfolding, the EF-111 would go out of the force structure. We need to sort through this and we need to come up on the net and do what is right in my view.

GENERAL HATCH: *Thank you General Fogleman. How do you see the civilian workforce supporting the Air Force of the 21st century?*

GENERAL FOGLEMAN: The civilian workforce is going to remain as it has in the past — the core of our continuity. When we started the drawdown, we had 264,000 civilians working for the United States Air Force. Today we have about 193,000, and we are programmed to go down to 161,000. That is going to be slightly over a 100,000 drawdown.

When we started to drawdown in the active duty force, we had 608,000 folks, and we are setting at 415,000 today. We are going to 385,000. As we drawdown so far, the drawdown in the civilian workforce has generally been matched with the drawdown in work load. I am concerned about the next 30,000 drawdown.

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I am convinced that we are going to have to look for other ways of doing our work load. We still have some head room there — probably another 10,000 or so.

We also face some contradictions. At the very same time we're being directed to pull down civilians, we have other directions. Butch [General Henry Viccellio, Jr.] has some of this in the training business where we are in the process of taking blue suit people out of the base operating support accounts and trying to replace them with civilians because it has made sense. We've done this in places and it has worked very well for us in the training business. So, we have this conflict.

At 161,000 civilians out of a total Air Force size that is going to be about 725,000, we are still going to have a high reliance on a very highly skilled civilian workforce.

GENERAL HATCH: *Thank you, General Fogleman. In the past you have stated the Air Force may identify its core competencies and focus resources there and consider outsourcing the non-core elements to civilian industry. Would you expand on those views please?*

GENERAL FOGLEMAN: The question has a crossflow between two of my previous statements. I talked about core competencies. They include providing air superiority; providing global situation awareness; providing global mobility and, as part of situational awareness, providing access into space. I can't see a way in which these core areas, other than perhaps in the space area, where we may be able, particularly in the command and control area, to take advantage of some commercial satellites that are up there and do some of these kinds of things.

But, the real issue has to do with contracting out, where we normally talk about core activities. We are really talking about those activities in the depots where we have identified certain kinds of core work that we think as an institution that we need to

focus on and keep the ability to do that organically. For the other parts that are not core, we ought to be able to have civilian aerospace industry do that. I happen to be one of the people who believes that we should do more, rather than less, of that. As we are sorting through the BRAC [Base Realignment and Closure] process and sorting through the construct of what our depots will look like post-BRAC, we are coming to grips with this issue and there will be more on this in the future.

GENERAL HATCH: *Thank you, Chief. A final question on a lighter note. Has the uniform board held its last meeting?*

GENERAL FOGLEMAN: The mother of all uniform boards is complete and the package has been provided to me. I have gone about half way through it. I shared some of the highlights with the folks at Corona [meeting of senior USAF leaders] yesterday, and I hope that within the next week to 10 days that we will be able to get the word out. Without singling out any part of the trade press, I would really like to be able to work in concert with *Air Force Times* to try to put out some kind of a comprehensive package on this that shows where we are going. So, for my watch, the last uniform board is being convened. It has done a great job. They received nearly 3,000 suggestions. They sorted them, cut them and sliced and diced them down to about 300 issues. They brought those forward and voted on them. In general, everything that I've seen so far is something that I think the force will be pleased with.

GENERAL HATCH: *Chief, thanks for being with us and thanks for all that you do for our Air Force.*

QUALITY PEOPLE FOR THE 21ST CENTURY

It is great to be back with so many friends and colleagues, both institutionally and individually, and great supporters of our Air Force. It is along those lines that I am going to talk with you today because I am going to leave you with a bit of a challenge to help us work one of our most difficult problems.

When I thought about the theme of this year's Symposium, *Meeting the Challenges of the 21st Century*, I could forecast folks like the Chief and Secretary would offer some vision into the next century, and Joe Ashy would talk about "space" being a principle part of our Air Force in the next century. I probably could have predicted that Mike Loh and Ron Yates would engage in a dialogue — not the first or not the last; probably just the most recent — on tooth and tail.

I thought perhaps I might talk about the applications of technology in the area of education and training, and how we might look into the 21st century in a way to exploit and train our people and educate our people very differently than we do today. That is underway.

But then I thought again, and it suddenly dawned on me, just as it's been the case in our 20th century Air Force, the real key to our success in the upcoming century will be our people. Given the fact that the people who are going to make that 21st century Air Force such a success, especially the ones we are preparing to bring on board today, and given the fact that the number one problem, not only in our com-

mand at AETC, but for our Air Force today, is recruiting, I wanted to bring you up to date in that area and perhaps, as I said, offer you a challenge.

I'm going to try something new and resort to a little multi-media approach. I thought perhaps some pictures would help and certainly be a little bit more useful to you than a larger than life Butch Viccellio. I want to talk about what is going on, where we are headed in the recruiting business, give you a status report and an outlook for the near future. We face some problems and we have some initiatives underway. There are initiatives you can be a part of and I'd like to ask for your help in that regard.



Mission

- Recruit a High Quality Volunteer Force Responsive to Air Force Needs.

Take a look at what we do in the recruiting business. There are some words that are critical: "Quality" is important to us. We like to think of ourselves as a high tech Air Force, and we like to think of our people as special in terms of their quality. That quality has to start with the folks we bring in the front door, both enlisted and officer. As you'll see throughout this presentation this morning, we have maintained our standards of quality and we've kept our focus on quality.

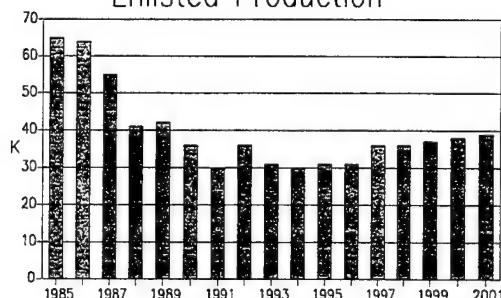
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Another key word is "volunteer." The all-volunteer force is under tremendous pressure today, for a variety of reasons. I will share my perspectives on what the reasons are.

And a final key issue is "Air Force needs." We need people who have the right kind of talents, the right kind of skills, the right kind of aptitudes, and the right kind of character for our Air Force today. We don't just need anyone. So we have to focus on "Air Force needs" as we look at that eligible pool of folks out there.

Before we get into recruiting itself, I'd like to share with you two numbers demonstrating how much we have reduced the number of folks that are coming in the front door of the Air Force each year. People often ask me, in light of the drawdown, how small is the Air Force getting? The Chief talked about the 34 percent reduction from a force structure perspective. The reductions from our personnel perspective are going to be larger than that.

Enlisted Production

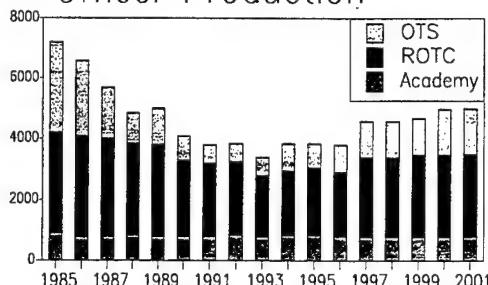


I've used these charts to illustrate what I might call a Cold War baseline, at least 1985 is a Cold War year. In the enlisted arena, we would bring 60,000 to 70,000 and in some years of the Cold War nearly 90,000 young people through Lackland [Air Force Base, Texas] into the Air Force each year. Throughout the mid-90's, we brought that down to about 30,000, more than a 50 percent reduction.

Some of that reduction was driven by the fact we were in the midst of the drawdown, and the enlistment rate will go back

up to somewhere around 35,000 a year. We have seen substantial change, which may have been a factor influencing the mindsets of our young people today.

Officer Production



On the officer side, it is the same story. We had upwards of 6,000 to 8,000 officers per year during the Cold War years, and we are down to between 2,000 and 3,000 a year. We've kept our Academy at near full production. There is a Congressionally mandated readjustment coming — a 10 percent reduction in the cadet wing — but that notwithstanding, we've made the overall reduction in officer accessions by reducing our programs of both ROTC and the OTS school.

So, when talking about enlisted or officer, we have had some substantial reductions in our quotas and our goals. It has become a very difficult market indeed.

Our typical recruiter has about 10 years in service and averages just a short time in recruiting as we've had a tremendous turn over. There are a couple of key points.

Typical Recruiter

- SSGT
- Married/Two Children
- 32 years old
- Volunteer
- Two years experience
- Twelve years time in service
- Selected from among the best in his/her career field

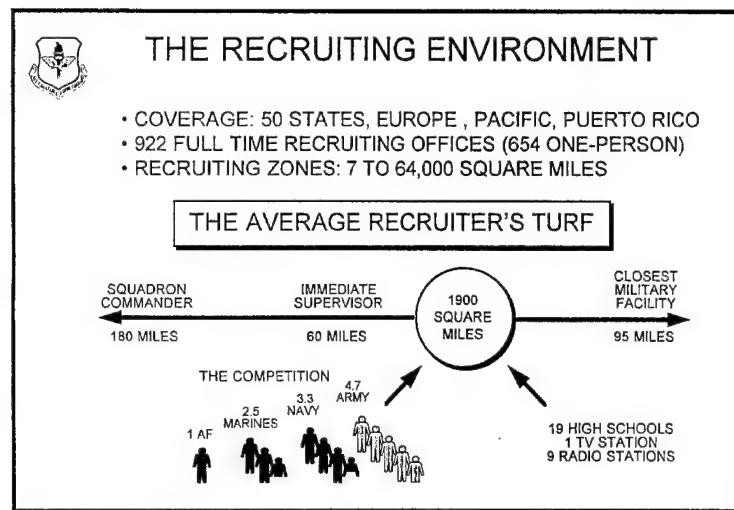
Our recruiters are volunteers. Just like every other part of the Air Force, we focus on volunteers. We go out and recruit the recruiters. You might have read in the *Air Force Times* recently it is becoming more difficult because the word is out — this is becoming a pretty tough job out there in America.

But our recruiters are doing a great job for us. In most cases they are going to be the only representative of our Air Force in a community. They have to be the right kind of person with the right kind of aptitude and the right kind of attitude. They must be the kind of person who can exist without supervision and do the right kind of job for the Air Force.

When you look at the environment they are working in, you begin to see how problems might be developing. We have coverage across our states and overseas, where we focus principally on the dependent kids of service members. We have about a thousand recruiting offices and you might notice a majority of them, over two thirds, are one person offices — one recruiter operating alone in a community.

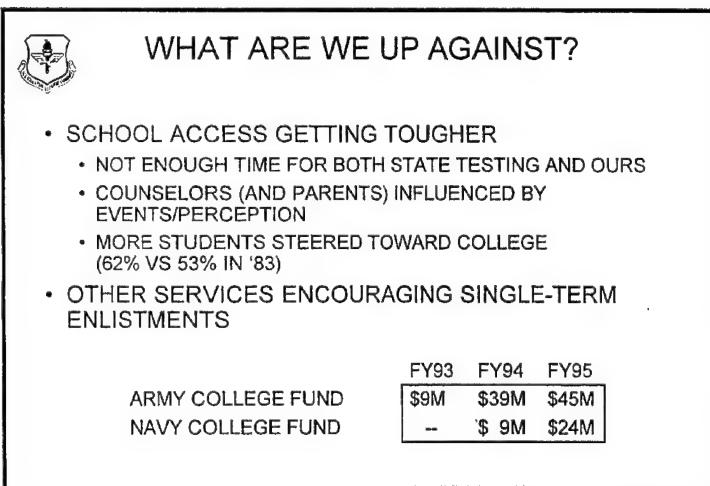
The recruiting zones vary widely depending upon the environment we put them in. On the small side, you've got the Times Square recruiting office, which has the responsibility for only seven square miles, but in Bozeman, Montana, you've got an area of tens of thousands of square miles. Just to visit a high school in his or her district, the recruiter has to go TDY.

The average recruiter is in this environment: responsible for just under 2,000 square miles and far from any source of support. It is difficult to get the same family support found on a military installation, and their immediate supervisor, normally a master sergeant or a senior master sergeant flight chief, is a number of miles away, and their squadron is a good distance away.



Here is what they are responsible for in the area of average number of high schools and TV stations and the things they use in the market they work.

Also, one Air Force recruiter is up against two and one-half Marines, about three and one-half sailors and nearly five Army troops as they compete for the quality folks within a given eligible population.



Given this competition and the environment they are in, there are also some things changing. It is becoming more difficult for our recruiters to penetrate the market, to get into the high schools, and get the counselor's support, for a lot of reasons.

First of all, an awful lot is happening around the world. Our young men and women, as the Chief alluded, are TDY

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participating in hot spots that tend to dominate the headlines. The counselors and the parents tend to worry about that. They get the impression that everybody is getting sent overseas, which as the Chief pointed out, is not the case, except in a few weapons systems and we are doing something about that. But it tends to generate a perspective.

And that big drawdown you read about in all the headlines tends to drive the perception that we are not hiring. In fact, that has been one of our big problems on the Hill. As we go from 90,000 enlistees a year down to 30,000, the natural tendency is to suppose you must have long lines waiting outside the recruiter's office, and now their only job is to pick the finest. Nothing could be further from the truth.

We must change that mindset. I might also add the services, throughout the period of the drawdown, have put something just short of a million young men and women out in the street, who we incentivized to depart. While we claim they left as volunteers, when young people ask them for advice about enlisting today, the advice they give is often negative: "They forced me out and if you join today, they may force you out in a small number of years." Nothing could be further from the truth, but it makes for a hard sell by our recruiters in today's environment.

You might notice another thing is changing; a considerably higher percentage of our high school graduates are attempting a college curriculum than just 10 years ago. They are interested in college and counselors are pushing them toward that college opportunity. Quite frankly, in many high schools, our recruiters who are trying to push an enlisted opportunity are running up against counselor opposition.

You can see the amount of money the Army and Navy have begun to put on college funds. We have steered clear of that up until now. By offering an addition to the Montgomery GI Bill benefits — additional college tuition stipends — in effect they are buying a one-tour sailor or a one-tour soldier. Because this money is available to them at the end of their first hitch, most of them leave and enter college with these payments of up to \$30,000.

We are sticking to the approach that says we want people who will become interested in several reenlistments in an Air Force career.

Here's what it looks like stacked side-by-side with the other services. We have the smallest goal principally because of our high retention among our enlisted force.

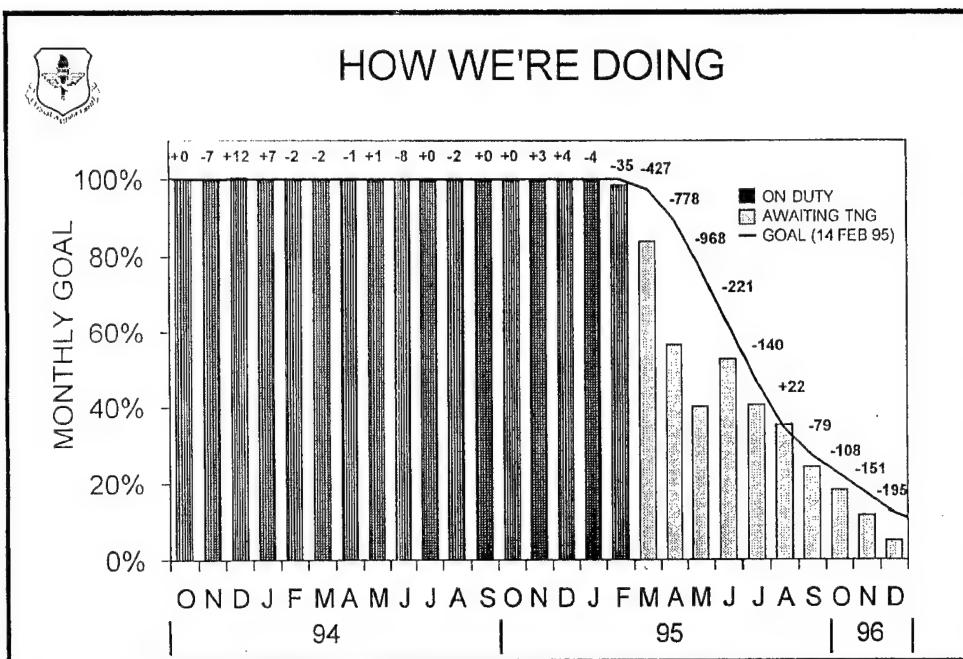
We have the lowest number of recruiters. Our advertising budget is by far the smallest. We've been able to get away with that and still meet our quality goals in the past, but we may need to readdress this number in year's ahead.

You can see the amount of money, scholarships, and educational opportunity money the other services are beginning to use, and the AFSCs [occupational specialty codes] where they give an enlistment bonus. They are trying to solve the issue with a lot of money to the individual which is something we have stayed away from, but we may be forced to go in that direction if things get much tougher. Up to now, we've been able to work the issue a different way.



THE COMPETITION

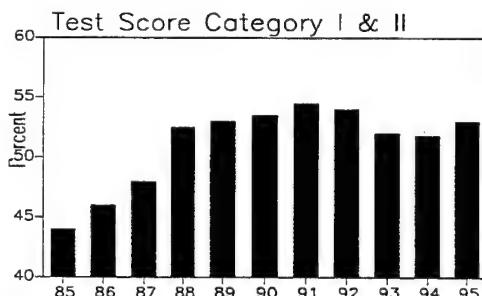
	GOAL	RECRUITERS	AD \$	EDUCATION INCENTIVES (4-YR ENL)	ENLISTMENT BONUSES (# SPECIALTIES/AMT)
ARMY	62,000	4441	55M	\$30,000	47/\$1500-8000
NAVY	53,185	3446	43M	\$30,000	142/\$1000-6000
MARINES	35,450	2550	14M	\$30,000	ALL/\$1000-5000
AIR FORCE	31,500	871	8.5M	\$14,400 + CCAF + TA	4/\$1000-4000



How are we doing? Let me talk quantity for a second and then we'll talk quality. Here is our problem: We call this the waterfall chart. Month after month through 1994 and the beginning of 1995, we've met our goal. In each of the out months, we should have a number of folks in the bank, awaiting their start date at Lackland. In general, we would like to be on or above this line. It makes us feel good. You can see we have about a 2,000 person shortfall, many of whom we need to enter in the upcoming months between now and the time of graduation from high school. In June and July we tend to have a big influx in the eligible pool.

The good news is we looked at this same chart in December and we were facing a 4,000 shortfall. We've fixed half our problem. We've found enough people who want to join, plus we've found 2,000 of our shortfall. But we still have 2,000 to go, and our time is running out. Once we pass this opportunity, we will have to make up our difference through reenlistment rates when this population gets to their first reenlistment point a few years from now. From a quantity point of view, we are fac-

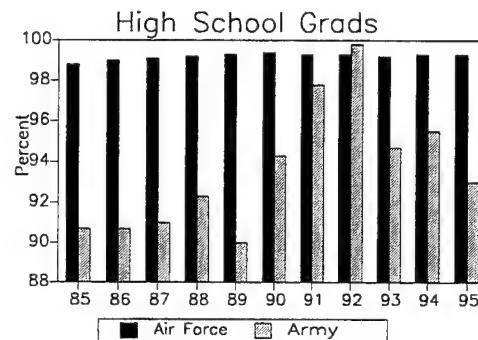
ing our first potential shortage in many, many years.



I also want to make point on quality. We call these our leading indicators. It gives us a chance to look ahead and see what trends are developing. One is test scores. We give everyone an aptitude test and so do the other services. We like about 50 percent of our recruits to be in the top 2 score categories. These are the folks who show mechanical aptitude and overall aptitude. We had a tremendous improvement going through the late '80s and early '90s, but then as recruiting markets started to get tougher, we came back to around 50 percent. We are doing a little bit better this year, even though we are short on quantity.

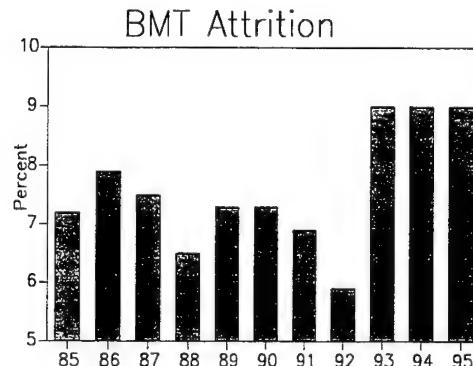
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For the other services, the Marine Corps is at about 42 percent and the Army and Navy have quit giving us data, and I have a feeling they are down about the 30 percent rate for the top 2 test scores on their recruits.



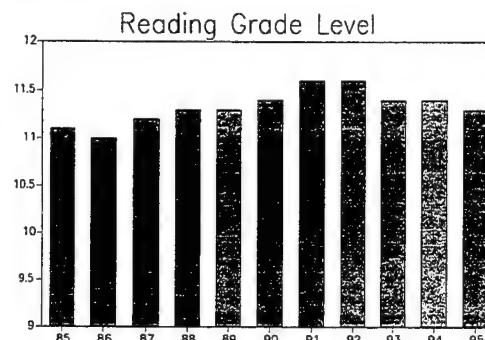
With respect to high school graduates, we basically are holding the line on nearly 100 percent. We grant a few exceptions for unusual folks.

We track the Army data, and they had improvement through the late '80s and early '90s, but they've really fallen off a cliff and I think by the end of the year they'll be down below a 90 percent.

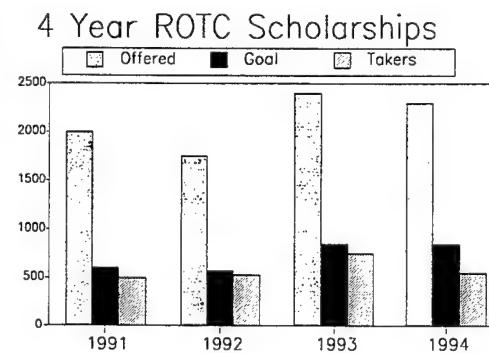


We track attrition from boot camp, and we'd like this to be as low as possible, recognizing there will always be some folks that don't make it through boot camp. We had improvement throughout the last decade and then all of a sudden there have been three straight years of difficulty. I think it is just a reflection that the recruiters are being forced to send folks who are not quite as committed to an Air Force

career as perhaps two or three years ago. When a person gets to boot camp and the drill instructor sticks his or her nose right up there and starts dropping them for push ups and putting on the stress, all of a sudden they decide that no, this isn't really what I'm about and they depart. That has driven attrition much higher than we'd like to see.



For reading grade level, we are doing fine. It has dropped off a little bit in the last three years, but I don't think it is anything to worry about. But I wanted to share these with you as an illustration that despite the fact we are short on numbers, and may indeed come in below our target for the first time in awhile, we are holding the line on quality. We will continue to do so, unlike the other three services, until things get even tougher than they are today.



I wanted to mention something about our ROTC program because we are seeing the same kind of effects on the officer side. These charts show for the last four years the number of people we've contacted

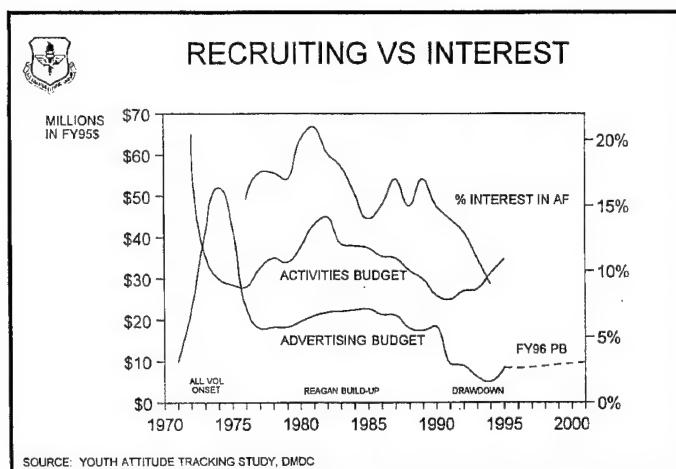
out there in the high schools who have exceptional high school credentials and offered them a full, four-year ROTC scholarship to the university of their choice. Each year we offer about 2,000 scholarships, expecting and meeting these numbers illustrated by the orange bars to be takers. With our ROTC production on the upswing, that is going up each year. But for four straight years now, and particularly in these last few years, we have not been able to give away our four year college scholarships. It is incredible how leery quality high school students are about signing up and committing themselves to an Air Force career.

There is a good news side to this. We've been able to take that unused scholarship and apply it in different ways. We've been able to pick up some juniors through a two-year scholarship program by using our unused four-year scholarship money for our current junior and senior population, but that still doesn't help us with the class of '98 and the class of '97. We're going to have to make that up in years ahead as those classes progress through their sophomore years.

So what are we doing about it? One of the first things is to look at advertising dollars.

You can see our advertising budget has been through some real perturbations over the history of the all-volunteer force. When the draft ended back in the early '70s, we were scared to death and didn't know what to expect. We spent big dollars, \$50 million a year, on advertising. Then we settled down to a \$20 million range throughout most of the Cold War. But then, as we started cutting our Air Force budget in 1986, we began to cut our recruiting advertising dollars, and we continue to be victims of our own success.

We've met our quality and quantity goals over those years until it got down abysmally low, and we started running into problems. Look at this "interest rate." A



DOD survey shows only 10 percent, now less than 10 percent, of those high school seniors surveyed each year say they have any interest in an Air Force career. And we are the highest of all services. I think there is some relationship between this advertising trend and this interest trend. I am glad to say we finally turned the perspective on the Hill back around, and our advertising budget is back up to \$8.5 million this year, and it will go up to \$10 to \$12 million in the years ahead.

If things continue to get tougher, we may have to readdress that and add some more dollars, then you will begin to see and hear things about the Air Force in the media again. This is one of those additional areas of emphasis.

Recruiting Initiatives

- Improved advertising budgets
- Recruiter Assistance Program
- Media Coverage
- Broadened Target Population
- Gold Bar Program
- "Everyone a Recruiter"
 - Home Base
 - Recruiter Support
 - Personal Referrals

We are talking about our problems, and trying to get folks to participate. This week's *Air Force Times* is a help. They've

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done a good job of helping us describe the problems. I hope in future issues they will help us work the fixes as well. The bottom-line is we are working hard to get the word out to folks that we are hiring, as the Secretary said earlier this morning.

There are some other initiatives that are underway. Let me talk about an attempt to attack a new market. We have always focused on the high school market for recruiting our enlisted force. As I mentioned earlier, more people are going to college. When you take a look at the cohort group, you see the late teen, early 20's population declined for a while until about '94. Now, it has started back up. But within that group, there are all kinds of people. There are folks who are already in the service. There is a big population out in high school who are not interested, and that is growing. And there is a population that is growing that is heading for college. We've always focused on this very, very narrow band of folks in the high school senior class who are interested and qualified.

We know more people are going to college, but only 55 percent of those who start ever finish a four-year degree. At some point, whether they go through a two-year program or whether they fall out for financial purposes or academic purposes, they have one thing in common: they need a job.

We are going to focus on a new market and that is the folks who are leaving college. With some help from some colleges in North Carolina, we are learning how to penetrate that market and find those folks who are in trouble in college for one reason or another and are about to leave. This will be a big payoff for us because the numbers are so tremendous. It is something that may help us in the future, but not in the short term.

Our Gold Bar Program is helping us with our minority recruiting. Three years ago we took 19 ROTC graduates, predominantly minorities, and offered them a first

year on active duty helping us with recruiting. The payoffs were phenomenal. They went out to the high schools and into the colleges and talked about the opportunities in the Air Force, predominantly from a minority point of view. The next year, we had 34. This year we have 53. Next year we are going to have 119 "gold bars." You'll see the percentage of both our officer and enlisted force who are minority will grow substantially in the next three or four years thanks to our "gold bars."

Finally, probably our biggest initiative is going to be to try to convince everyone to change the old mindset that recruiting belongs to those guys down at Randolph [Air Force Base] in San Antonio. We need to change to a mindset where everybody in the Air Force, the whole team, whether they are wearing a uniform or are a civilian, is a part of the recruiting team. We've gotten word out to all our installation commanders about helping our ROTC detachments and our recruiters through our home-basing program. This gives them access to the base on a priority basis so they can come to the base, get their business done and get back out on the job with a minimum hassle. We are also trying to get our Air Force leadership at wing level, NCO and officer alike, out into the high schools with the recruiter. Because when an officer who shows up talking about scholarship opportunities for ROTC is with the recruiter, those counselors are probably going to open the doors a little bit, and we'll get better access and better visibility.

Finally, the last bullet is an important one. It is critical to remember if we can get our 400,000 plus in uniform and our 100,000 civilians around the Air Force just to think of someone they might know who is perhaps dissatisfied with his or her lot in life, who might consider an Air Force career as either an enlisted person or an officer, and get them into contact with the recruiter, all we need is one out of 150 and we can solve that entire shortfall that faces

us in the next 90 to 120 days. We are going to have a media blitz to our Air Force people to try to change that mindset and get all of us interest and involved.

Summary

- Tough market in today's environment
- Boosting advertising... Promoting awareness/interest
- Constant focus on Quality
- Broadening target population
- Help needed to tell our story

I would point out that the environment has really changed and we need to change our approach. You've been a great help as an institution, but I need your help individually. Just like we are challenging everyone in uniform, I would challenge all of you and those organizations that you represent to take a little time out of your schedule, out of your day, and not passively wait for an opportunity to come to you, but active seek an opportunity to talk to some young people at school or at a club or at church or wherever it might be. Talk to them about this issue. Make sure they know we are hiring. Let them know because the drawdown is generally over, we will have an excellent opportunity for those coming onboard today to stay for a career as long as you meet our standards of performance and conduct. That is a hard story to sell in today's environment, and that is why we need your help. That is why I am pleased to have an opportunity to come back, and once again, thank you for your support and to ask you for support in this critical area. Thanks a lot and General Hatch I am ready to answer some questions.

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General Henry Viccellio, Jr.
Air Education and Training Command

QUESTION AND ANSWER SESSION

GENERAL HATCH: *Thank you, Butch and let me be the first to say the Air Force Association has long had a great relationship with the recruiters who work throughout the nation. We will continue to support them and all of their duties and we'll try to help them with their mission. We have a number of questions for you. Will you consider providing support for tuition assistance of off-duty education?*

GENERAL VICCELLIO: Yes, we certainly will. We are reviewing the issue right now because, as is the case in a lot of other areas, our tuition costs are going up. We are trying to analyze exactly where the growth is coming from because it seems incongruous with a declining force.

Our first observation is it is company-grade officers attempting to get masters degrees. That is by far the largest part of the growth. We are asking ourselves questions like: Should we prioritize between where we spend these tuition dollars? Should we focus on an associate degree or perhaps a bachelor's degree for our enlisted force before we worry about graduate opportunities other than in residences at AFIT [Air Force Institute of Technology]? So we'll probably see some restructuring in the future, but you won't see any reduction in our emphasis to provide tuition assistance to our people.

The recruiters will tell you, "The number one attraction to the United States Air Force is educational opportunities." Whether it is AFIT, Tuition Assistance, or

CCAF [Community College of the Air Force], you will not see declining emphasis, but you will see increasing emphasis on making those programs real.

GENERAL HATCH: *Thank you, Butch. In the challenge of recruiting, are men and women joining in the same numbers?*

GENERAL VICCELLIO: No, in fact, a far greater percentage of our recruits, both officer and enlisted alike are female than any other service. That is a reflection of many facts. Number one, we have no quota at all. People often ask me could we take 100 percent females? I don't have to worry about that and what that might represent because we are so far from there. We are not even close to a point where there is even concern. About 24 percent of the folks coming in today, on both the officer and enlisted side, are female and they are doing a great job in all but just a couple of our career fields that are still closed to them. That word is getting around. I go out and visit groups of folks in our recruiting bank, I go to Lackland frequently and I go to ROTC detachments around the country. They are enthusiastic. They expect good career opportunities, and I think we are giving them to these folks.

GENERAL HATCH: *Thank you, General Viccellio. Does the Air Force have any plans to bring back the warrant officer program?*

GENERAL VICCELLIO: Not that I am aware of. Quite frankly I don't see a

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need to.

GENERAL HATCH: *Next question: what are your prospects regarding pilots, shortages, and banks?*

GENERAL VICCELLIO: Ok. I didn't talk much about these issues. Maintaining the pilot inventory and our training rate has been our number one management problem throughout the drawdown. It is simply because we made a decision early in the drawdown to downsize to the Base Force and the Bottom-up Review force as fast as was practical. Our goal was to get ourselves to the size, shape and style of the 21st century as early as we could, get on with it and save some dollars. So we did.

When you close a flying unit, there is a population of air crew members, mostly officers, but some enlisted as well, who by logic and by law need to continue to fly. So you reassign them to the remaining squadrons. For this transition period, you don't have the ability to put the new pilot school graduates into the organization the way you normally do. That is what forced us to reduce our pilot training rates to the lowest level since before World War II; forced us to take some of our recent graduates and put them into this infamous pilot bank, where we gave them non-rated duty for two years. It is a terrible thing to do to a new air crew member, but it is a much better alternative than to kick them out of the Air Force. Some services resorted to that. We made a promise to bring them back to rated duties in about two years and we are keeping it. And they are doing fine, by the way, as they come out of the bank and get requalified.

GENERAL HATCH: *Thank you, General Viccellio. Is the joint primary pilot training initiative on track and when will it be fully implemented?*

GENERAL VICCELLIO: Yes, it is on track. Our plan was to start with two prototype squadrons, one at Whiting Field, in the Naval Training Wing, near

Pensacola, Florida, the other one at Reese Air Force Base in an Air Force SUPT [Specialized Undergraduate Pilot Training] wing. Both of those squadrons are alive and well. They both have instructors and students from each of the services. The number two officer in command, the XO in their case, the DO in our case, is from the other service and within the next 12 months in each case will rotate to become the squadron commander within a flying training wing of the other service. We will begin expanding those to other squadrons in this coming year. We had hoped to do this in relation to the advent of JPATS [Joint Primary Aircraft Training System], which has been stretched out, but we'll get there.

We will have our squadrons, although they will still be flying in some cases the Tweet [T-37] and the T-34 for a number of years in the joint configuration within about five years, and it is working really well. People are excited about it.

And as many of you know, we've gone beyond that. We have Air Force students and instructors now at Corpus Christi [Naval Air Station, Texas] in the T-44, training folks enroute to the C-130. The Navy has instructors and students in the T-1 at Reese enroute to the E-6 aircraft at Tinker [AFB, Okla.]. We are about to go into a navigator joint training program at Randolph and Pensacola. It is working fine and on track.

GENERAL HATCH: *Thank you, General Viccellio. There are a number of questions addressing JPATS. Will the delay in the program require us to extend the life of the T-37 engines and can you comment in general about the program?*

GENERAL VICCELLIO: Let me answer the first part of that this way. I was surprised when I read an article in *Aviation Week* that all the contractors who were in competition for the JPATS contract were incensed at this most recent event. I first thought to myself, "None of them have

called me." Then I thought to myself, "you know, it would surprise me if they were incensed." When Mr. Deutch's [Honorable John M. Deutch, Deputy Secretary of Defense] hit list came out last fall, I looked at our little JPATS program amidst all those favorite sons and those big money projects which in every case were supported by some emerging technology or growing world threat, and our JPATS program had none of that to back it up. I thought, "We are dead meat." With some great support from the Secretary, General McPeak, and later General Fogelman, we fought our way through and emerged stretched, but alive. To me that is nothing but good news.

We are going to have quite awhile to work on accelerating that program once we get source selection and contract award — 17 years to be exact. Quite frankly, we may be able to do some of that. But I am interested in getting on with it and we are going to do so this summer.

With respect to the Tweet and the T-34, both of those aircraft will be supportable and will survive that extension period until the last Navy airplane will be produced under the current proposed schedule in 2012.

GENERAL HATCH: *A final question for General Viccellio. How do you assess the results of the year of training initiatives?*

GENERAL VICCELLIO: We had a wing commanders' conference at Randolph recently and I took the opportunity to give a report card after AETC's first 17 months in existence. I am amazed at what we have been able to achieve. We have gone through a major reorganization, disestablishing two commands and standing up this new one, AETC. The reorganization and changes, such as assuming the combat crew training responsibilities and the educational responsibilities for the Air Force, went very smoothly. We've made that a success.

We have put increased focus on the kind

of product we produce, whether you are talking about pilots or crew chiefs or plumbers or whatever it is. We are trying to turn out folks who are much closer to being able to do their job on their first day of assignment at that first operational base. We have been very successful in that regard. No longer do we have folks who enter the Air Force without tech school. Everybody gets a good start on their career now.

We are about 25 percent of the way through the development of our seven-level courses which will give some mid-career, I call them mini-sabbaticals, to our seven-level candidate NCOs. That will be finished within another 18 months and we'll have all those courses on line. Putting education and training together in a way where we bring to bear and offer to our people in a more structured way what we have to offer them is working well.

The one area we did not foresee and will require changes is we told our enlisted force we needed them to slow down at the apprentice and the journeymen and craftsmen level and not race to a full qualification as fast as squares could be filled and things could be certified. We wanted them to take some time and gain some experience at each point along the way. But at the same time we were telling them that, in our command, we are going through these initiatives to turn out someone who could be productive their first day on the job. To the folks in the field, we had one set of instructions from headquarters saying brand new apprentices can't do much, so don't let them really do much but watch. Now, it really didn't say that, but that is what the folks in the field thought it said. At the same time, here are Viccellio and the guys in AETC telling everybody that are producing mission-ready technicians to put them to work. This caused a little bit of a conflict and we are going to get that straightened out in short order. Other than that, I think it has gone extremely well.

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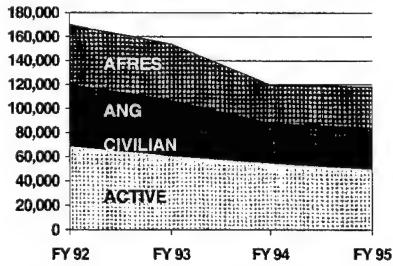
GENERAL HATCH: *Thank you very much for being with us today, General Viccellio. We wish you the very best in the future and look forward to your future success.*

AIR MOBILITY COMMAND — MEETING THE CHALLENGES OF THE 21ST CENTURY TODAY

Let me simply say that I am attuned to your theme for this conference — *Meeting the Challenges of the 21st Century*. I was on the Hill yesterday to testify before the Senate Armed Services Committee. It is a changed mood over there. Balancing the budget and proceeding forward with what we need in defense is not going to be easy to do.

Today I'd like to touch a little bit about our people, next our equipment, and then I'll talk about our challenges in the 21st century.

AMC Manpower Force Trends

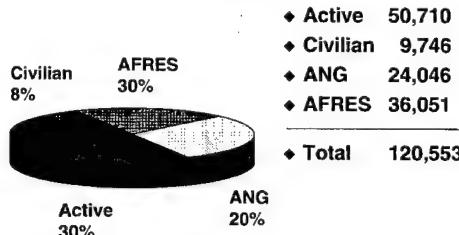


We are working with a Total Team — Guard, Reserve and civilians — to produce what this nation needs in terms of air mobility.

Let me describe what has happened to our manpower over the last few years. The transfer of the C-130s and the rescue mission attributes for the drawdown from about 170,000 to 120,000. That was an appropriate move. We now have those assets out with the component commanders doing the things they need to do in theater to support those theater CINCs [Commanders-in-Chief].

Air Mobility Total Force

(As of 13 Feb 95)

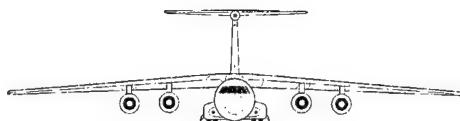


In our Total Force team, better than 50 percent of our total capability lies in our Guard and Reserve. It is a very, very close working relationship. Don Shepherd [Maj. Gen. Donald W. Shepperd] and Bob McIntosh [Maj. Gen. Robert A. McIntosh] worked this problem very hard on a day-to-day basis. It is not a we-them relationship. It is a team working the problem. We do not disagree. Every time I have asked for help from the ARC forces, they have provided it. They can say the same thing.

In talking about partnerships, the CRAF [Civil Reserve Air Fleet] is one of the best for the American taxpayer. Fully 93 percent of our passenger capability in Air Mobility Command and 33 percent of our cargo capacity lie in those 255 wide body equivalents the CRAF partners have committed to our defense needs should the need arise. There is about \$1.4 billion worth of business we award on a year-to-year basis to attract people to the CRAF program. It is a very cost effective program. I am pleased with the way it is proceeding. It is comforting to know that if

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the need arises, we can call upon the most efficient and productive airlines in the world to support our defense needs.



Now, while I'm talking about airplanes, let me shift to the workhorse of our force, the C-141. It has been around far too long. The average C-141 is about 28 years old now, and was designed in the 1950s, built in the 1960s, stretched in the 1970s and worked very hard throughout the Cold War. The fleet averages over 37,000 hours on the airframes today. In recent years, we've found cracks in the center wing box, the inner and outer wing box, the windshield frame, and in the cockpit area itself. We've recently found cracks in the wing panels associated with the weep holes. At one point, about 14 months ago, we had fully 70 percent of the force either grounded or restricted. We've worked our way through the weep hole problem, and I am very proud of the support we received from Warner-Robins ALC [Air Logistics Center]. Were it not for those dedicated professionals down there, the C-141 would have been already retired.

We've been working since 1981 to replace the C-141. We're 14 years into the program right now. Given the rate we are moving and the current program, we will retire the last C-141 in the year 2006, 25 years since we started working that program.

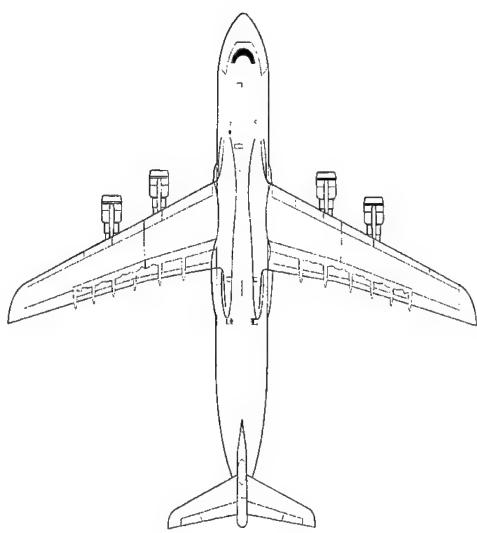


The C-17 is the replacement that we have been working on. It is a fine machine. I won't go through its troubled past, and why it has taken us 14 years to get here, but I will simply say the program is moving forward. We presently have 14 C-17s on the ramp at Charleston [AFB, S.C.]. A total of 19 have been delivered to the Air Force. The last seven airplanes delivered to us have been ahead of time, some of those airplanes by as many as 40 days ahead of time.

It passed a mini-maintainability and reliability evaluation this last November — did an excellent job for us and met our expectations in those terms. On the 17th of January, I declared IOC [initial operational capability] of the airplane. We were supposed to have 12 planes on the ramp to do that, but we actually have 13 as a result of early deliveries.

We have 48 crews trained. We have a maintenance force trained. We have all the training facilities in place. We have the spares and parts we need. And, we had the enroute system up and operating.

Today, we are continuing the initial operational test and evaluation. At the same time we are using this airplane out in the system. It is doing productive work, today. The turnaround in the program has been so dramatic the National Aeronautics Association just recently announced the McDonnell Douglas-United States Air Force C-17 team has been awarded the Collier trophy for 1994. It is a program well on its way to being a useful part of the U.S. Air Force airlift fleet.

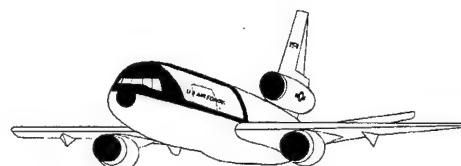


The C-5 has also been around some time. The first ones rolled off the line in the 1960s. Of the 126 C-5s, 50 were produced in the 1980s. It is a very capable machine, and it was well ahead of its time. As we've experienced problems with the C-141, the C-5 has had to pick up an additional part of the load. As a result, the reliability and mission capability rates of the airplane are not what we'd like to see today, but we are working on that problem very hard, and we are committing a significant number of resources to do that.

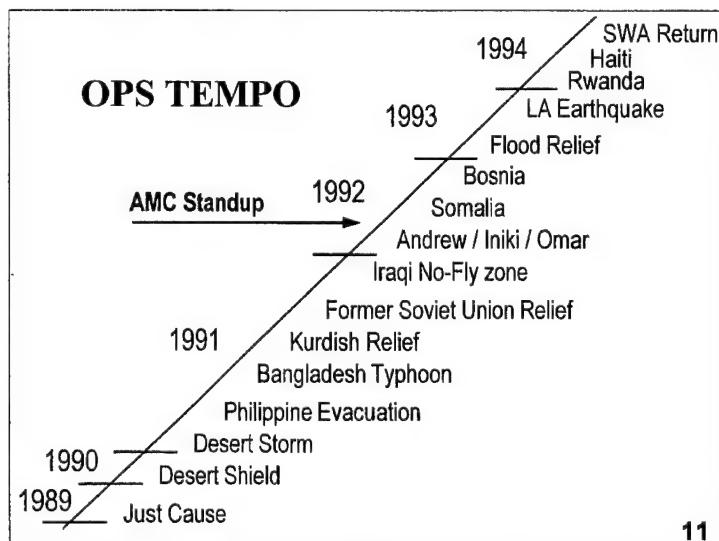
We are investing heavily in modifications for our C-5As to bring them up to the C-5B standard. We have extended our depot line to the point where the flow time is about 320 days to get the C-5A through the depot. Those modification hours have gone from about 550 back in 1990 to over 6,000 hours per airplane today. That has impacted our fleet. About 20 percent of my C-5 capability is presently sitting down at Kelly Air Force Base undergoing depot repair.

The KC-135, is the oldest active airplane in the U.S. Air Force inventory. About 35 years old, it is a superb air machine for what it was designed to do. While it is old in age, it is young in terms of flight hour numbers. It only averages about

14,000 hours, primarily because it sits on SIOP alert for so long. It is a very, very young airframe. Those airplanes have been around so long, and been sitting out there in the elements that corrosion is a concern. We are watching very closely to make sure we don't run into the same kind of problems we ran into with the C-141. The mission capable rates on this airplane are as high as any I have in the fleet. That is a tribute to the young maintainers out there who work on this airplane.

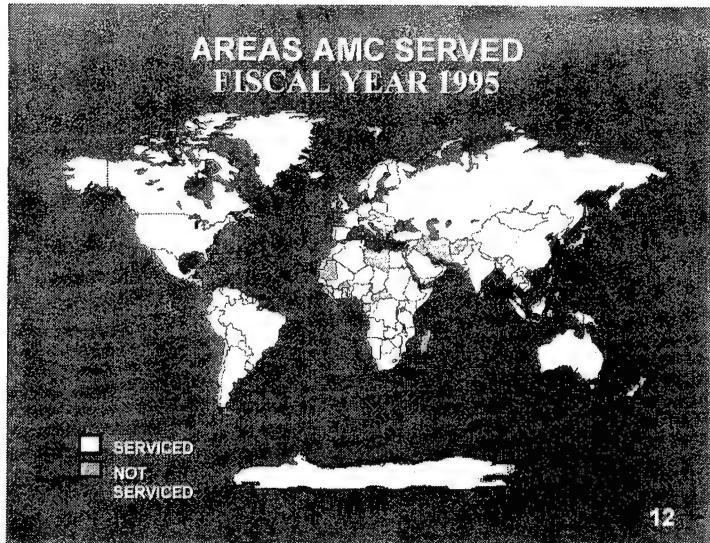


With hindsight and additional dollars, we would have bought more KC-10s. This is a fantastic airplane. It can do the refueling mission and also carry a significant amount of cargo. I am very pleased with the airplane and it is doing a super job.



Let me turn for just a second to OPS TEMPO, a current topic of high interest. These are a few, and only a few, of the operations that AMC has been involved in recent years.

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I heard what the Chief said about the uniform board. If Air Mobility Command people were to receive a campaign medal for every contingency they had been involved in recent years, we would have to redesign the uniform. They have been very busy.

I've been in command at Air Mobility Command for about four months now. In those four months, Air Mobility Command has operated into and out of 232 countries of the 265 in the world. To say we are on the go and we are busy on a day-to-day basis would be an understatement.

On a typical week, we have a thousand sorties operating into 40 countries. It is a busy operation. And while we are busy, I would tell you that our young men and women are extremely ready and trained. In peacetime today, they are out there doing what they would do in wartime. We are very proficient at what we do.

What does the future hold? The SecDef, Secretary Perry [William J. Perry] recently said there are probably three times when we should commit forces: first, where our national interests are at stake; next, when there are important interests at stake, but not necessarily critical national interests; third, when there are humanitarian concerns. Rwanda is a good example of the latter. The American people wanted

to do something in Rwanda. We needed to do something in Rwanda. We were the only nation in the world capable of doing the kind of things that needed to be done in Rwanda. To move water-making equipment from San Francisco to Rwanda could only have been done by the U.S. Air Force — 26 hours, nonstop to get water to a place that desperately needed it. Those kinds of things will continue in the future. This nation will be involved in those crises, and Air Mobility Command will be in the middle of those operations.

In many ways, your air mobility forces are the deterrent force of the 1990s and 21st century. We saw this last fall when there were problems with Iraq moving forces south. By moving what was needed in a short period of time — in the days and hours that can only be done by airlift — we were able to give Saddam Hussein second thoughts and he backed away. The capability to move rapidly and fast with force has a tremendous deterrent effect, and I am very proud of the system that is able to do that in Air Mobility Command.

It is not easy. It takes people — people working hard on a day-to-day basis, and we have some of the best I've seen in my 33 years. I am very proud of them, they deserve your support and I know we can count on it. Thanks very much.

General Robert L. Rutherford

U. S. Transportation Command

QUESTION AND ANSWER SESSION

GENERAL HATCH: *General Rutherford, you briefly addressed the CRAF [Civil Reserve Airlift Fleet] in your briefing. Is the system healthy and what initiatives are you pursuing to assure adequate participation in the future?*

GENERAL RUTHERFORD: As I mentioned, we currently have about 255 wide body aircraft involved and committed to the CRAF program. About half of those are cargo airplanes and half are passenger airplanes. When we started, we awarded points to carriers for commercial peacetime business depending upon how many airplanes they committed to the program. We put about \$400 million a year of business out there. In recent times, we have taken the "city pair" business, which is the way GSA does business and how you get an airline ticket if you are going somewhere, and we rolled that into CRAF business. This was another billion dollars of business the airlines are competing for today.

So, as I said, there is \$1.4 billion in business. We are about to take the next step by taking the small package business we do in DOD and roll that into the program. This is another \$400 million we do every year.

Our dollar pull is combined with a real commitment by the airlines to the program. When I talk to those CEOs and their operators, they are as true blue as we are in the U.S. Air Force. They work our problem on a day-to-day basis, and I'm very

proud to be associated with them. I am very pleased with the CRAF program.

GENERAL HATCH: *Thank you, General Rutherford. There are two or three questions asking about the future acquisition of C-17s and the non-development airlift aircraft [NDAA]. How do you foresee the process unfolding, and will the decision be made later this year?*

GENERAL RUTHERFORD: Most of you are aware the decision will be made in November by the Defense Acquisition Board. We put the C-17 on hold at 40 airplanes. We did that for a lot of good reasons which I will not go into now. Between now and then, we are attempting to, number one, assure we understand the performance of the C-17. We have completed developmental tests and we are in the middle of operational tests at this time. We will conduct a reliability, maintainability and availability evaluation in July of this year which will allow us to gather additional data we need to support the decision.

At the same time, there is a draft RFP [Request for Proposal] on the street and the formal RFP will be out in March. We will take those offers and roll them into a decision base which will be part of the cost effectiveness evaluation to be done this November.

Another part of the evaluation is the most extensive analysis that has ever been done of airlift. It is the Strategic Air Force Airlift Force Mix Analysis that is ongoing right now. We are looking in great detail

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at the cargo to be hauled by unit element and by aircraft number, tail number, to find out really what it is we need in terms of oversize, outsize and bulk cargo. This will be part of the decision being worked from May to next November. We are getting all the pieces together to make the right decision. I don't know what the decision will be, but we will have the facts.

GENERAL HATCH: *Thank you, General Rutherford. You noted in your briefing that you would retire the last C-141 in the year 2006. With the decision to proceed with modernization of airlift, do you have enough money in the program to buy the right amount to meet the two MRC strategy throughout this period?*

GENERAL RUTHERFORD: Yes, we think we do. We have a little less than 40 million ton-miles per day capability as it sits today, and given the program we have on line, we will be able to get to either 49 or 52 million ton-miles which we think is the target right now for 2 MRCs. I have great assurances that we can do that.

While we are talking about 2 MRCs, I know it is a subject of considerable debate. Let me simply say I know there is consensus among the warfighting CINCs [Commanders-in-Chief] that we do have sufficient combat power to fight two MRCs and win two MRCs. There is some question about lift. The question is not whether we can lift the combat power, the question is about the timeliness of the lift. We are in the process of iterating a number of questions with the CINCs: what comes first, what comes last, and when does it arrive? We are very pleased with the way the analysis has been going. The key is the "halting force" — what you get into theater early on. The halting force is driven by two things: what you have prepositioned and what you can airlift in those first days and those first hours. Even afloat prepositioning is going to take days to get there. Sealift, while it will carry the bulk

in the build up and counter attack phase, takes awhile to move the distances that we are talking about.

Another reason why we need to be very concerned about what we do in the airlift force is because if we don't size the airlift force right, we will be taking considerable risk. The more airlift you buy, the less risk you have.

GENERAL HATCH: *Thank you, General Rutherford. We have two or three questions on tactical airlift. Recognizing that the C-130J is coming into the inventory, will there be a follow-on requirement for tactical airlift in the next century?*

GENERAL RUTHERFORD: That is Mike Loh's [General John M. Loh] question, and I think he is nodding yes. There is no doubt that we are going to have to replace some C-130s and buy some C-130Js down the road.

GENERAL HATCH: *A final question asks about your AMC personnel and the OPS TEMPO you described as you conduct operations around the world. Is this stabilized today, and what are your projections for the future?*

GENERAL RUTHERFORD: Today our people are on the go a lot, no doubt about it. If you look at our tanker airlift control element people, who are probably on the go more than others, they are averaging about 175 days TDY a year right now. I am concerned about that. There needs to be less. When you talk with those people, they are very proud of what they are doing, and they are not complaining. They know what they are doing is important and are pleased to be there. It is not only OPS TEMPO that is having an impact; it is the reorganization that we've done, and it is also the bases we've closed. This past year 64 percent of my tanker force PCS'd [permanent change of station]. In a two-year period, everyone of my KC-10 crews and maintenance personnel will have PCS'd. That is creating a lot of

turmoil underneath the surface associated with the OPS TEMPO. They are on the go a lot, but there spirits are high. They are very ready. They only ask for our continued support. This group will give it to them. Thank you.

GENERAL HATCH: *Thank you very much for being with us today, General Rutherford. Ladies and gentlemen, that wraps up this session of our AFA Symposium. I want to remind you of our symposium in Dayton, Ohio, on 2-3 May. On behalf of Gene Smith, our national president, and all the officers of the Air Force Association, thanks for attending. We stand adjourned.*

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